

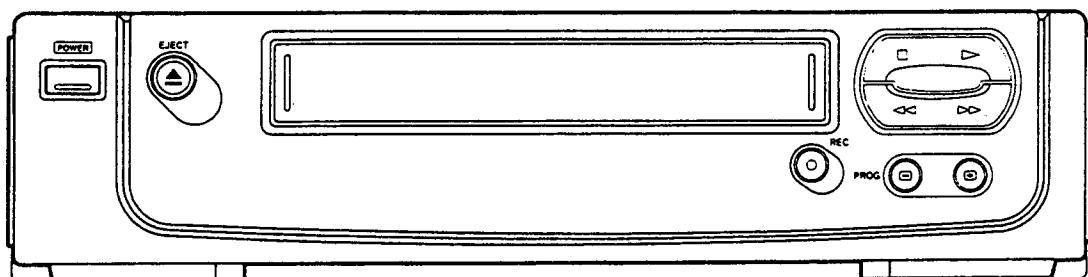


# SERVICE MANUAL

+ ALBA



## VCR 7272 / 7474



# SPECIFICATIONS

## SYSTEM

Video signal	PAL standard colour PAL/SECAM	Output: Audio line out	SCART-type connector more than 1K ohms, -6 dBm, unbalanced
Channel coverage	VHF Channel 2-12 UHF Channel 21-69 CATV Channel S1-S20, X,Y,Z,or S1-S41,X,Y,Z 40 positions 30-39 CH (adjustable)	Frequency response Signal to noise ratio Audio Distortion	100 Hz-8KHz More than 38.dB Less than 3% (SP)
channel memory	73±3dBuV		
VHF output signal			

## VIDEO

Input: Video line in	SCART-type connector 1.0Vp-p 75 ohms unbalanced, sync. negative
Output: Video line out	CART-type connector 1.0Vp-p 75 ohms unbalanced, sync. negative
Signal to noise ratio	More than 43dB (SP)
Horizontal resolution	230 lines

## AUDIO

Input: Audio Line in	SCART-type connector more than 50K ohms, -8 dBm, unbalanced
----------------------	--

## TAPE TRANSPORT

Tape width	12.65mm (1/2")
Tape speed	23.39mm/sec
Maximum recording time	180 min, with E-180 tape (EP)
FF. REW time	Approx 4 min (E-180)

## GENERAL

Power requirements	AC 230V 50Hz
Power consumption	17W

## DIMENSIONS

Set size (WxHxD)	360x90x312 mm
Carton size (WxHxD)	445x180x412 mm
Weight (gross)	5.4Kg

## • Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

### 1. Insulation resistance test

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table below.

### 2. Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.) See table below.

### 3. Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table below.

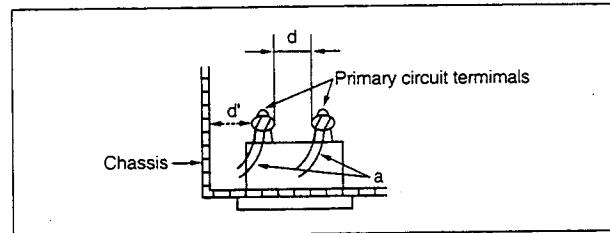


Table 1: Rating for selected areas

AC Line Voltage	Region	Insulation Resistance	Dielectric Strength	Clearance Distance (d), (d')
100V	Japan	$\geq 1 \text{ M}\Omega/500 \text{ V DC}$	1kV 1 minute	$\geq 3 \text{ mm}$
110 to 130V	USA & Canada	---	900V 1 minute	$\geq 3.2 \text{ mm}$
* 110 to 130 V 200 to 240 V	Europe Australia	$\geq 10 \text{ M}\Omega/500 \text{ V DC}$	4 kV 1 minute	$\geq 6 \text{ mm (d)}$ $\geq 8 \text{ mm (d')}$ (a: Power cord)

\* Class II model only.

**Note:** This table is unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

### 4. Leakage current test

Confirm specified or lower leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.)

Measuring Method: (Power ON)

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure and following table.

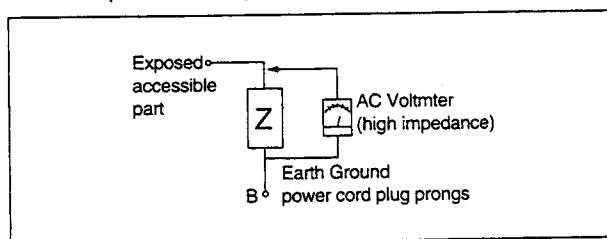


Table 2: Leakage current ratings for selected areas

AC Line Voltage	Region	Load Z	Leakage Current (i)	Earth Ground (B) to:
100V	Japan	$1\text{k}\Omega$	$i \leq 1 \text{ mA rms}$	Exposed accessible parts
110 to 130 V	USA &	$1.5\text{k}\Omega$ in series with $1.5\text{k}\Omega$	$i \leq 0.5 \text{ mA rms}$	Exposed accessible parts
110 to 130 V 200 to 240 V	Europe Australia	$2\text{k}\Omega$	$i \leq 0.7 \text{ mA peak}$ $i \leq 2 \text{ mA dc}$	Antenna earth terminals
		$50\text{k}\Omega$	$i \leq 0.7 \text{ mA peak}$ $i \leq 2 \text{ mA dc}$	Other terminals

**Note:** This table is unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality

Fig. 2

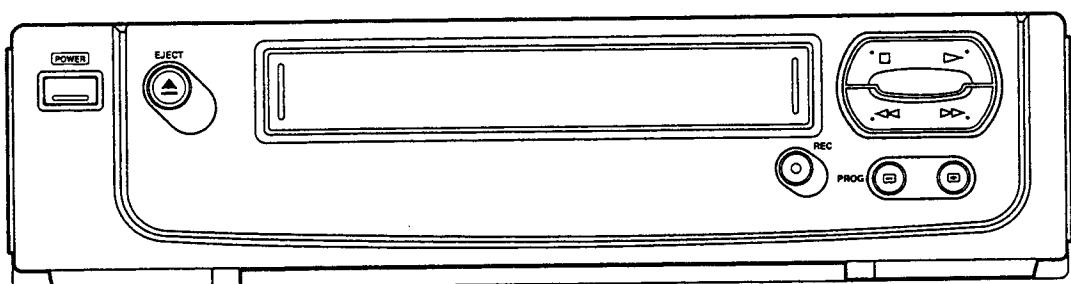
# TABLE OF CONTENTS

---

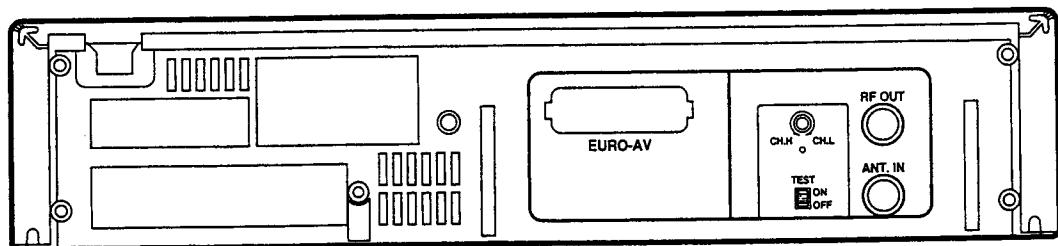
<b>SECTION 1. CONTROLS AND FUNCTIONS .....</b>	<b>2</b>
<b>SECTION 2. ELECTRICAL ADJUSTMENTS</b>	
2-1. SERVO CIRCUIT ADJUSTMENT METHOD .....	3
2-2. VIDEO CIRCUIT ADJUSTMENT METHOD .....	4
2-3. AUDIO CIRCUIT ADJUSTMENT METHOD .....	9
2-4. IF MODULE CIRCUIT ADJUSTMENT METHOD .....	10
<b>SECTION 3. TROUBLE SHOOTING FLOW CHART</b>	
3-1. POWER CIRCUIT .....	14
3-2. LOGIC CIRCUIT .....	16
3-3. SERVO-SYSCON CIRCUIT .....	18
3-4. AUDIO CIRCUIT .....	23
3-5. VIDEO CIRCUIT .....	25
<b>SECTION 4. CIRCUIT DIAGRAM</b>	
4-1. CONNECTION DIAGRAM .....	29
4-2. POWER CIRCUIT .....	30
4-3. SERVO-LOGIC CIRCUIT .....	32
4-4. LOGIC CIRCUIT .....	33
4-7. PIF CIRCUIT .....	34
4-10. OSP CIRCUIT .....	36
4-12. IF MODULE CIRCUIT .....	37
4-13. VPS CIRCUIT .....	38
<b>SECTION 5. VOLTAGE CHART .....</b>	<b>39</b>
<b>SECTION 6. COMPOWENTS LOCATION GUIDE ON PCB BOTTOM VIEW .....</b>	<b>47</b>
<b>SECTION 8. ELECTRICAL PARTS LIST .....</b>	<b>52</b>

# SECTION 1. CONTROLS AND FUNCTIONS

## FRONT



## REAR



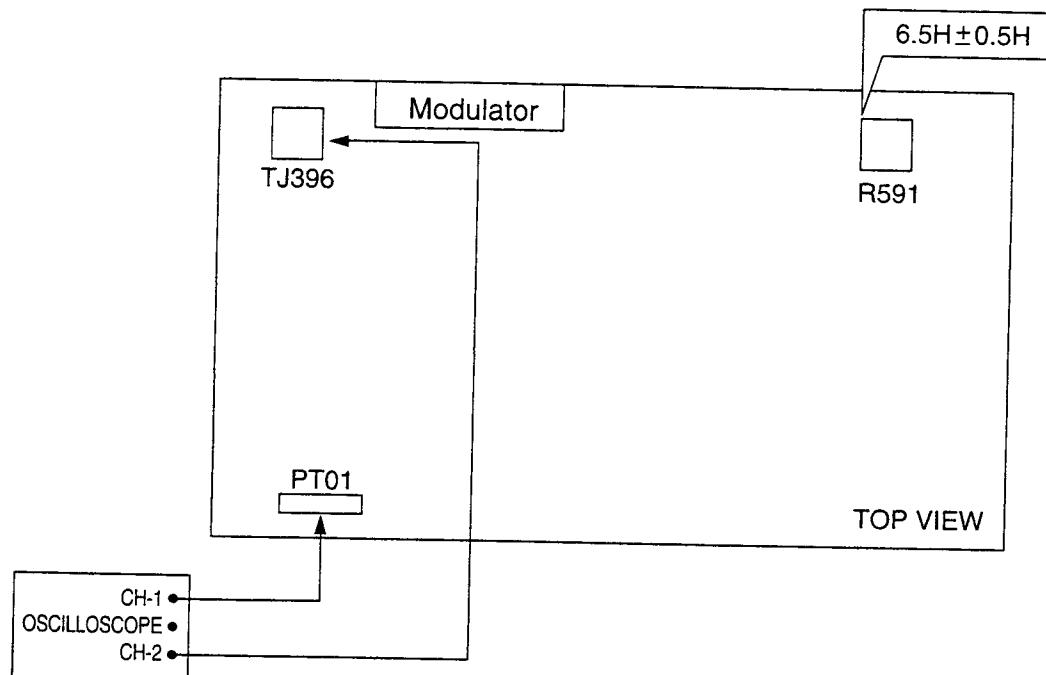
## SECTION 2. ELECTRICAL ADJUSTMENT

### 2-1. SERVO CIRCUIT ADJUSTMENT METHOD

#### 1. PLAYBACK PHASE

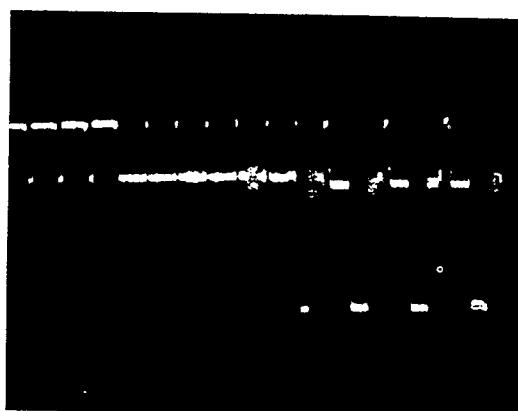
Adj. Location	Checking Point	Measuring Equipment	Mode	Test Tape
R591	TJ396 PT01 PIN ③	Oscilloscope	Play	DP-2

#### • Connection Method



#### • Adjustment Procedure

- 1) Play back the test tape.(DP-2)
- 2) Set the oscilloscope to the CHOP mode. Connect CH1 to the SW PULSE (PT01 PIN ③).
- 3) Adjust R591 to positive the rising edge of SW PULSE at  $6.5H \pm 0.5H$  from the V-SYNC

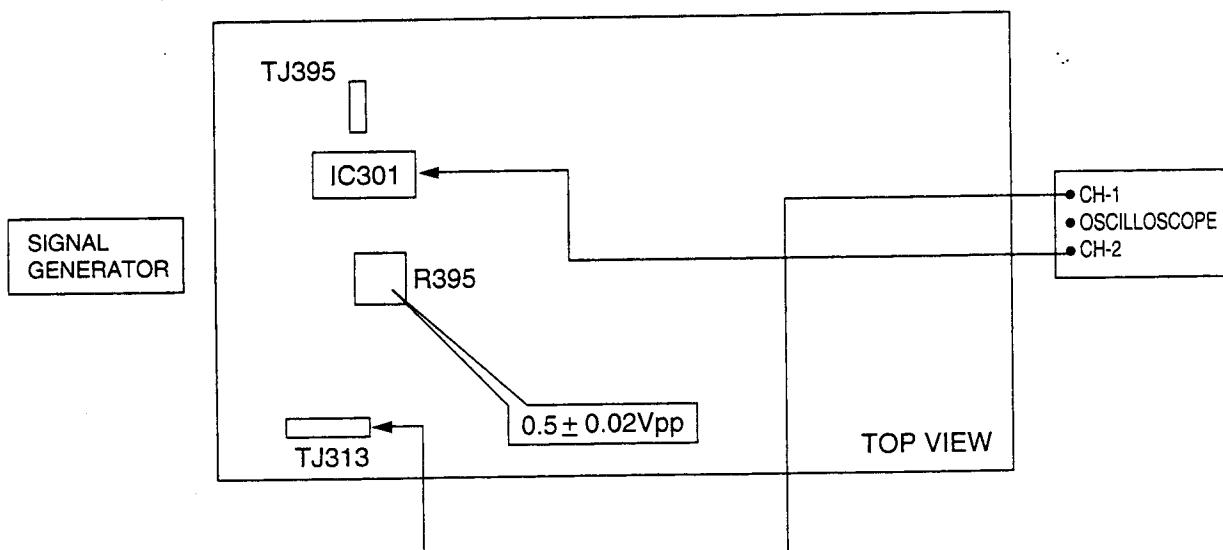


## 2-2. VIDEO CIRCUIT ADJUSTMENT MENT METHOD

### 1. EE LEVEL

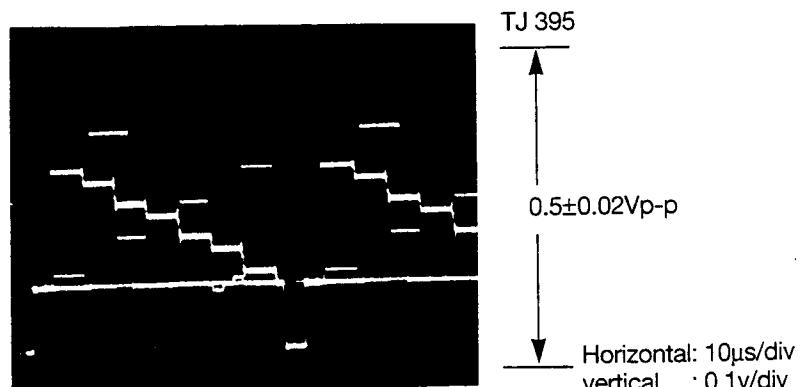
Adj. Location	Checking Point	Measuring Equipment	Mode	Test Tape
R395	TJ313 TJ395	Signal Gen, Oscilloscope	-	Color Bar With 100% White

#### • Connection Method



#### • Adjustment Procedure

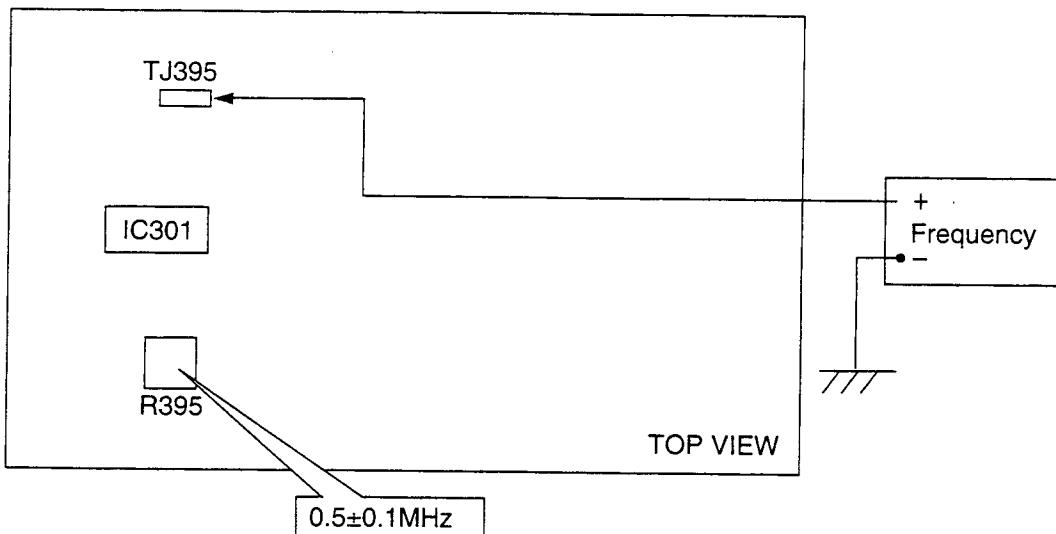
- 1) Set the TV/LINE to LINE mode.
- 2) Supply the Color bar signal with 100% white to the VIDEO IN TERMINAL.
- 3) Set the VCR to the STOP mode.
- 4) Connect the oscilloscope to TJ395 and trigger the scope externally with the composite synchronous signal from TJ313
- 5) Adjust R395 to obtain  $0.5 \pm 0.02V_{p-p}$  between the SYNC TIP a 100% white level.



## 2. SYNC TIP FREQUENCY

Adj. Location	Checking Point	Measuring Equipment	Test Tape	Input Signal
R391	TJ391	Frequency Counter	-	-

- Connection Method



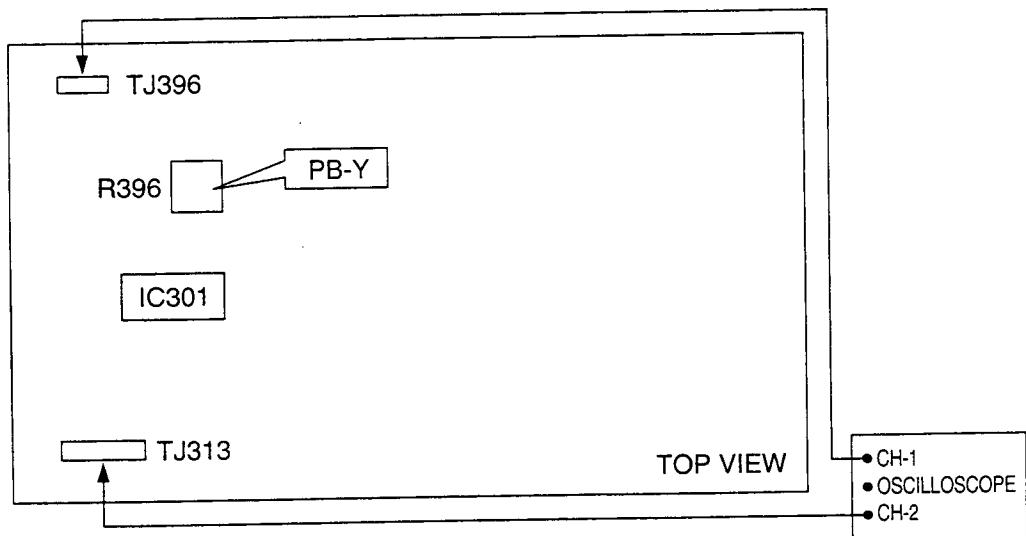
- Adjustment Procedure

- 1) Set the TV/LINE to LINE mode.
- 2) Supply the input signal in the OPEN state.
- 3) Set the VCR to STOP mode.
- 4) Connect the Frequency counter to TJ391
- 5) Adjust R391 to obtain  $3.73\pm0.1\text{MHz}$

### 3. PLAYBACK OUTPUT LEVEL

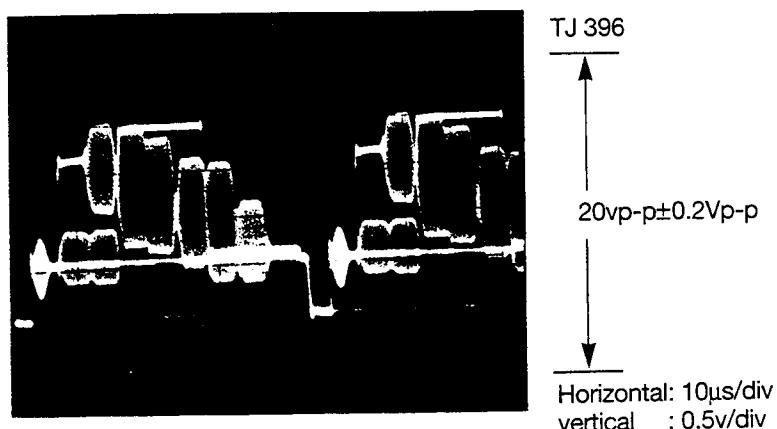
Adjustment Parts	Checking Point	Measuring Equipment	Test Tape	Input Signal
R396	TJ396, TJ313	Oscilloscope	DP-1	—

- Connection Method



- Adjustment Procedure

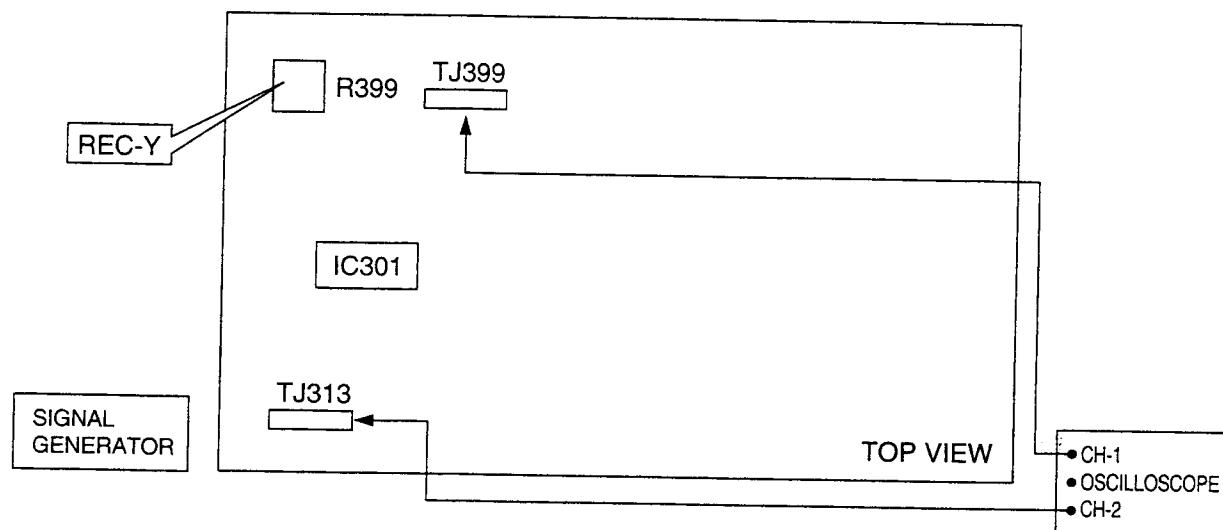
- 1) Playback the test tape, DP-1 Color Bar
- 2) Connect the oscilloscope to TJ396 and trigger the scope externally with C.SYNC signal from TJ313
- 3) Adjust R396 to obtain  $2.0V \pm 0.1Vp-p$  between the SYNC TIP and 100% white.



#### 4. LUMINANCE RECORD CURRENT

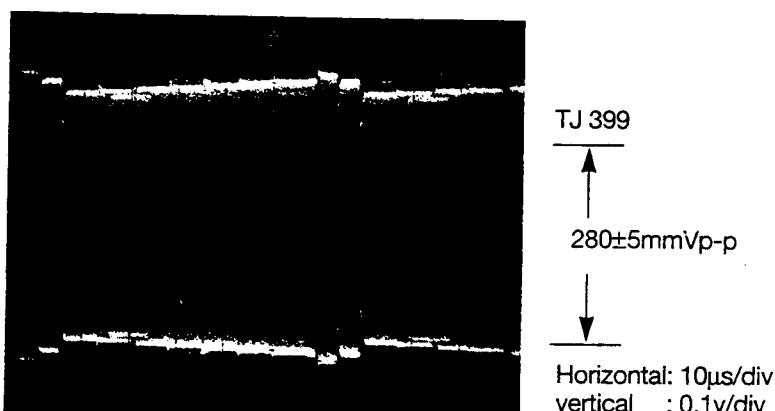
Adjustment Parts	Checking Point	Measuring Equipment	Test Tape	Input Signal
R399	TJ399, TJ313	Signal Gen, Oscilloscope	Blank Tape	Color Bar

- Connection Method



- Adjustment Procedure

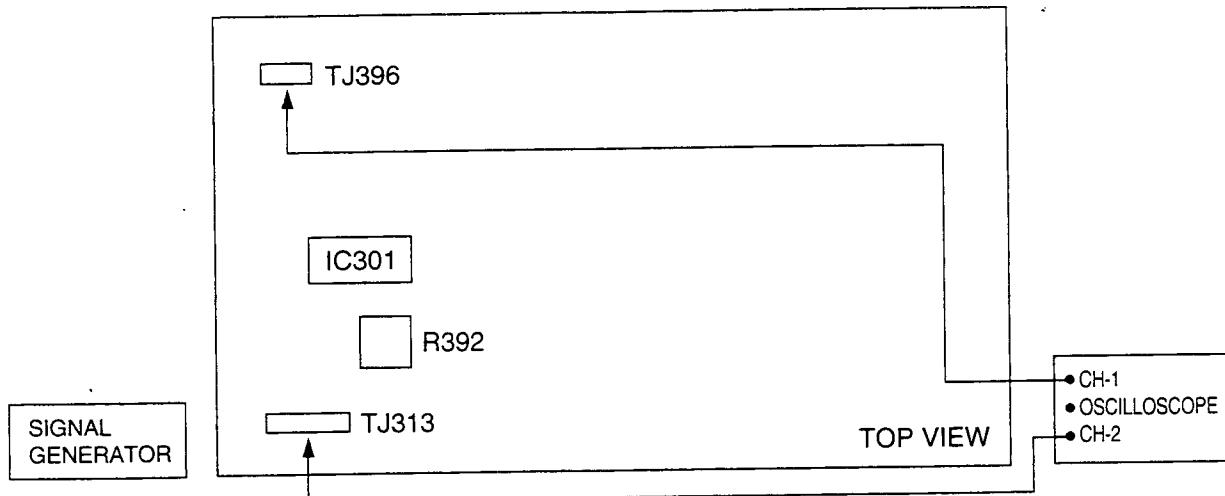
- 1) Set the TV/LINE to LINE mode.
- 2) Supply the Color bar signal to the VIDEO IN TERMINAL.
- 3) Set the VCR to the REC mode.
- 4) Connect CH-1 of oscilloscope to TJ399 and GND, and trigger the oscilloscope with SYNC signal at TJ313
- 5) Adjust R399 until record current became  $280 \pm 5\text{mVp-p}$  at SYNC TIP of luminance



## 5. FM DEVIATION

Adjustment Parts	Checking Point	Measuring Equipment	Test Tape	Input Signal
R392	TJ396	Signal Gen, Oscilloscope	Blank Tape	Color Bar

- Connection Method



- Adjustment Procedure

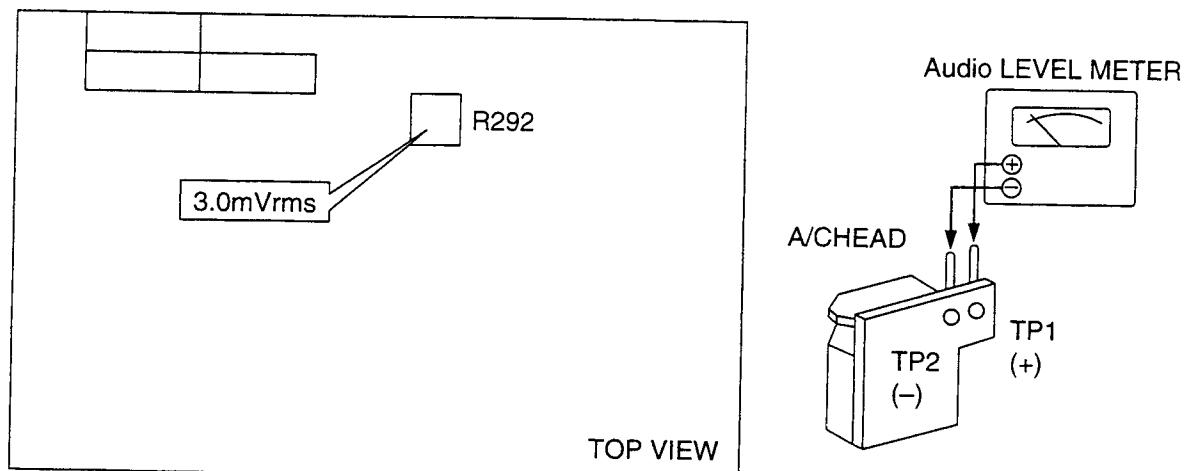
- 1) Set the TV/LINE to LINE mode.
- 2) Supply the Color bar signal to the VIDEO IN TERMINAL.
- 3) Record the color bar signal for a few minute and playback it.  
Then confirm that the playback Y-Signal aut level is  $2.0 \pm 0.2V_{p-p}$ .
- 4) If the playback level is not  $2.0V \pm 0.2V_{p-p}$ , adjust the following.
- 5) Turn the R392 a little. Record the color bar signal for a minute, and confirm the Y-signal output level.
- 6) Repeat step 1) until the playback Y-signal level became  $2.0V \pm 0.2V_{p-p}$  between the SYNC TIP and 100% white level.

## 2-3. AUDIO CIRCUIT ADJUSTMENT METHOD

### 1. AUDIO RECORD BIAS

Adjustment Parts	Checking Point	Measuring Equipment	Test Tape	Input Signal
R292	A/C Head PCB TP1(+), TP2(-)	Audio level meter	Rec	None signal

- Connection Method



- Adjustment Procedure

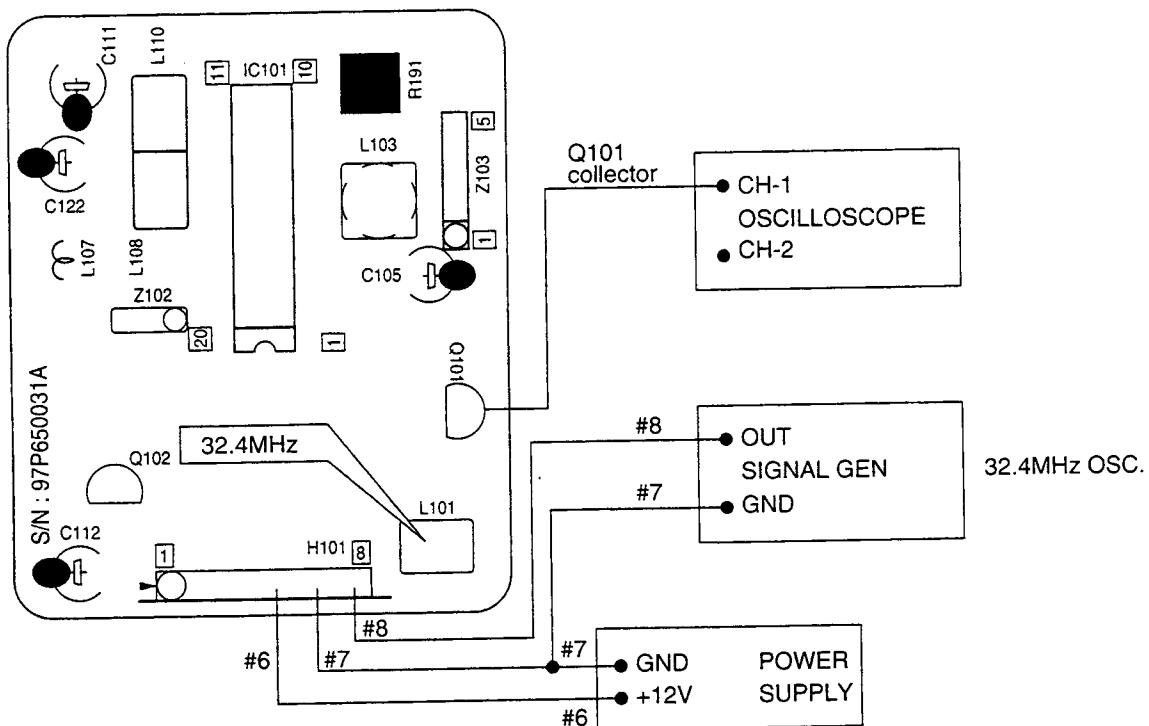
- 1) Set the TV/LINE to LINE mode.
- 2) Set the input to open mode
- 3) Connect the Audio level meter to both TP1 and TP2
- 4) After inserting a blank tape, record in SP mode.
- 5) Adjust R292 to obtain 3.0 mVrms.

## 2-4. IF MODULE CIRCUIT ADJUSTMENT METHOD

### 1. 32.4 MHZ TRAP

Adj. Location	Checking Point	Measuring Equipment	Input signal
L101	Q101 Collector	Signal gen Oscillo Scope Power supply	Refer to the followings

#### • Connection Method



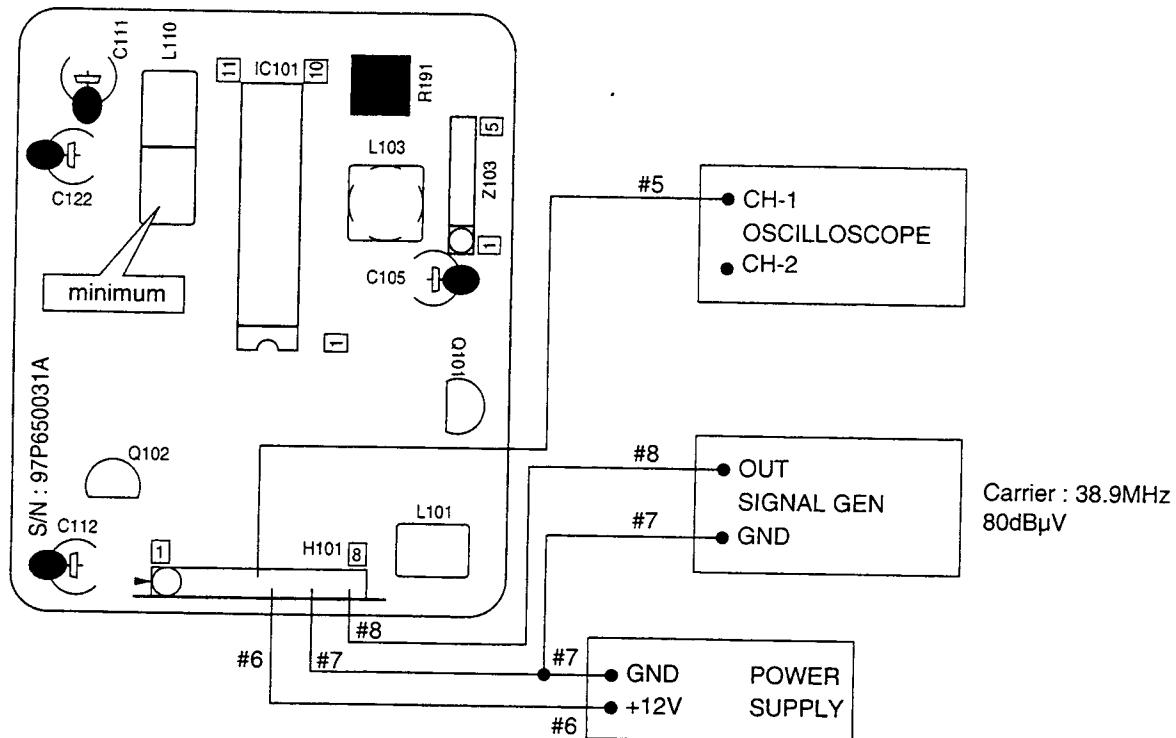
#### • Adjustment Procedure

- 1) Supply +12V to PIN ⑥, and GND to PIN ⑦ of H101
- 2) Connect the signal generator output to pin ⑧ and GND to PIN ⑦
- 3) Connect the Oscilloscope probe to check point
- 4) Adjust L101 to obtain minimum level of 32.4MHz component at the check point.

## 2. TANK RESONANT

Adj. Location	Checking Point	Measuring Equipment	Input signal
L109	H101 PIN ⑤	Signal gen Oscillo Scope Power supply	Refer to the followings

### • Connection Method



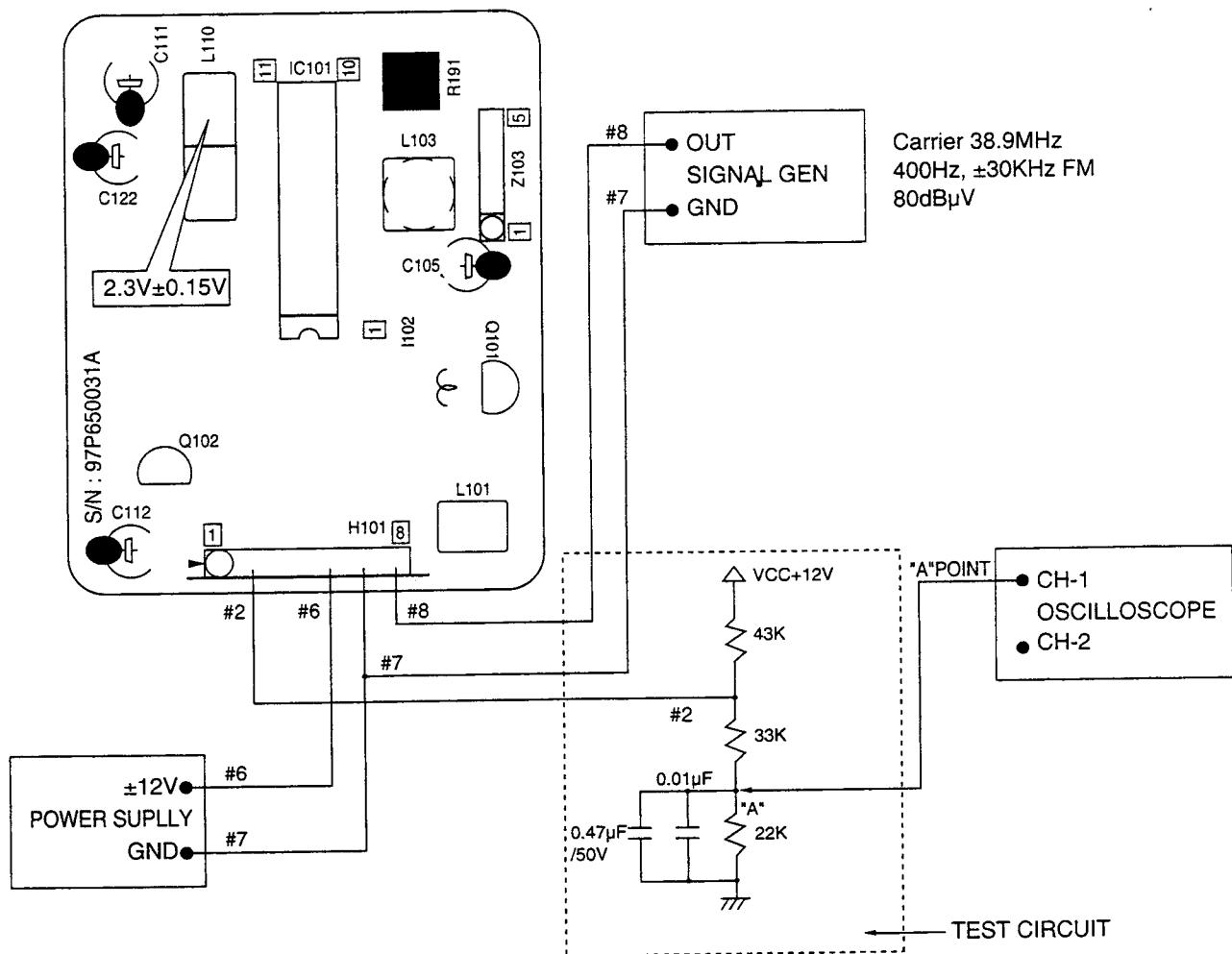
### • Adjustment Procedure

- 1) Supply +12V to PIN ⑥, and GND to PIN ⑦ of H101
- 2) Connect the signal generator output to pin⑧ and GND to PIN⑦
- 3) Connect the Oscilloscope probe to check point
- 4) Adjust L109 to obtain minimum DC voltage at the check point.

### 3. AFT COIL

Adj. Location	Checking Point	Measuring Equipment	Input signal
L110	"A" Point	Signal gen Oscillo Scope Power supply	Refer to the followings

#### • Connection Method



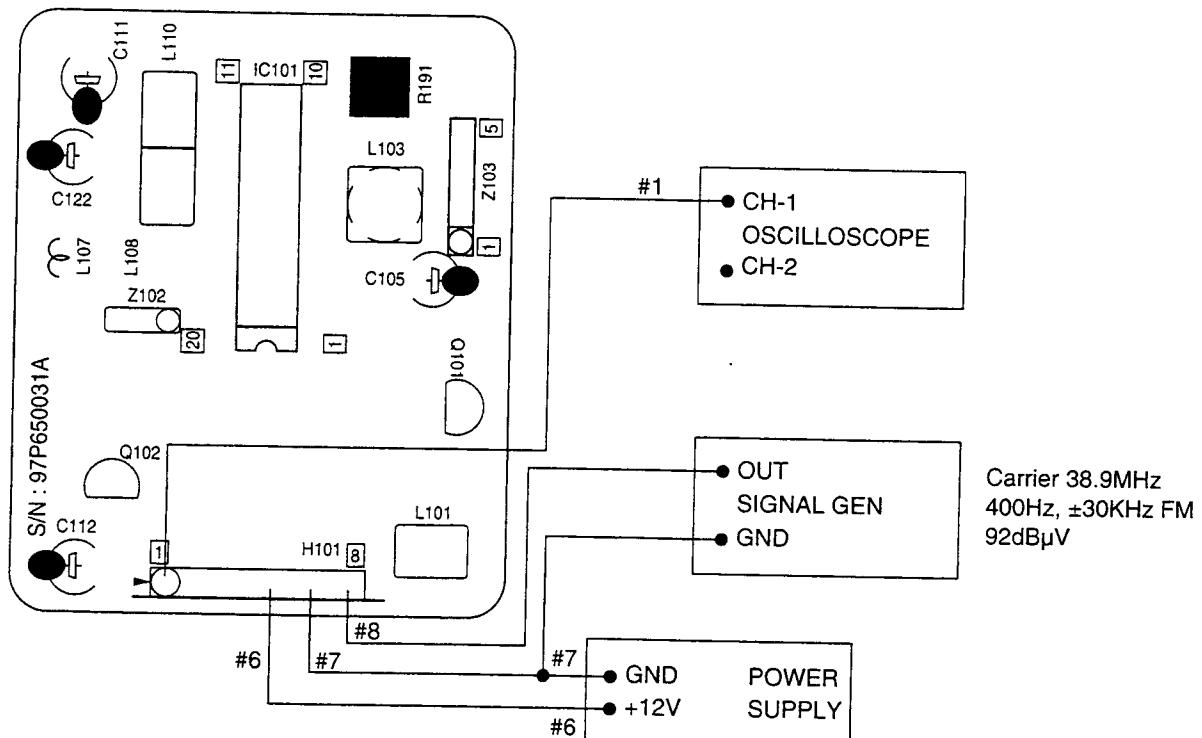
#### • Adjustment Procedure

- 1) Connect the TEST circuit to PIN ② of H101
- 2) Supply +12V to pin ⑥ and GND to PIN ⑦ of H101
- 3) Connect the signal Generator output to PIN ⑧, and GND to PIN ⑦
- 4) Connect the oscilco scop probe to check point
- 5) Adjust L110 to obtain  $2.3V \pm 0.15V$  DC at "A" point DC Voltage change repidly.

#### 4. RF AGC

Adj. Location	Checking Point	Measuring Equipment	Input signal
R191	H101 PIN ①	Signal gen Oscillo Scope Power supply	Refer to the followings

- Connection Method



- Adjustment Procedure

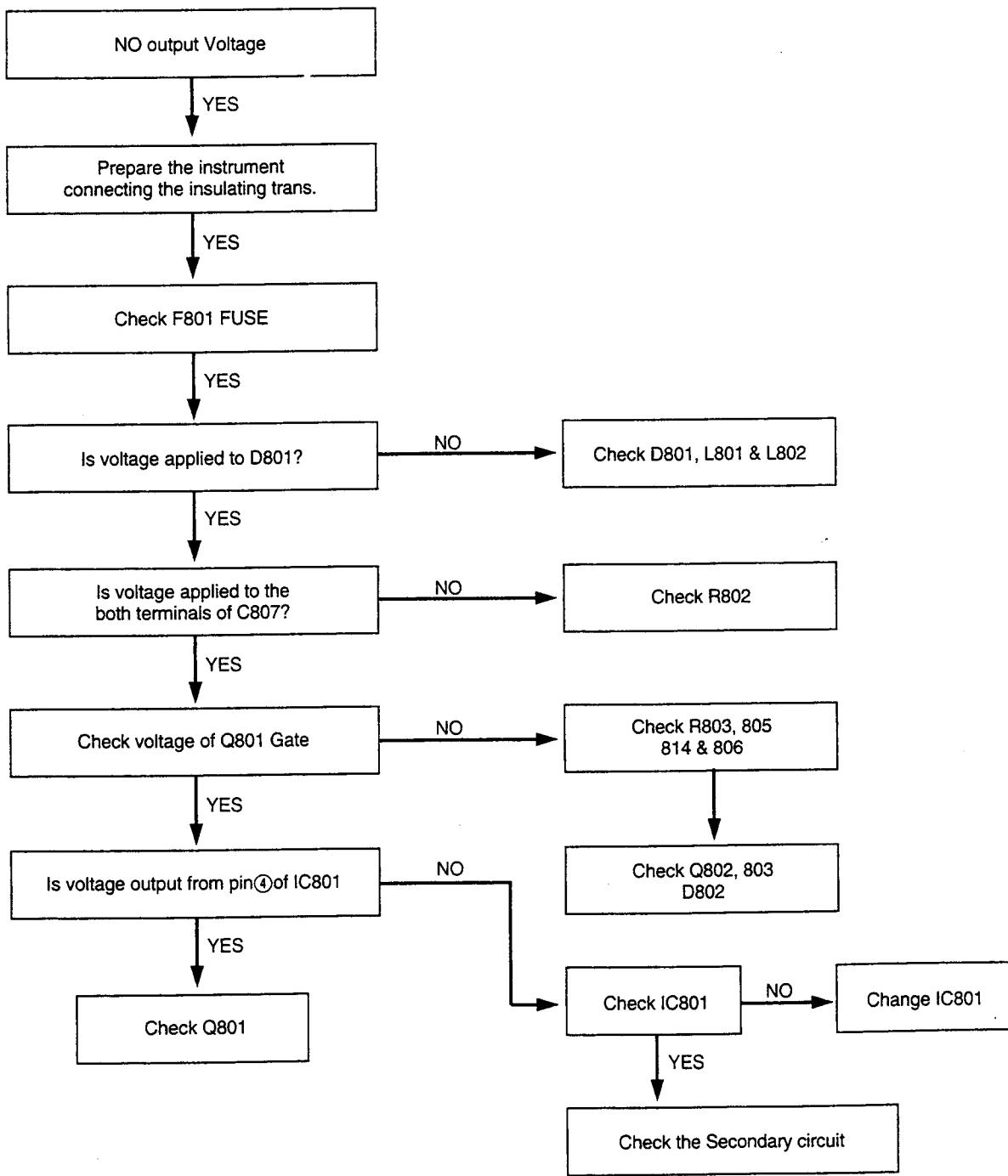
- 1) Supply +12V to PIN ⑥, and GND to PIN ⑦ of H101
- 2) Connect the signal generator output to pin⑧ and GND to PIN⑦
- 3) Connect the Oscilloscope probe to check point
- 4) Adjust R191 to obtain  $6.0 \pm 0.2V$  DC at check point.

# SECTION 3. TROUBLE SHOOTING FLOW CHART

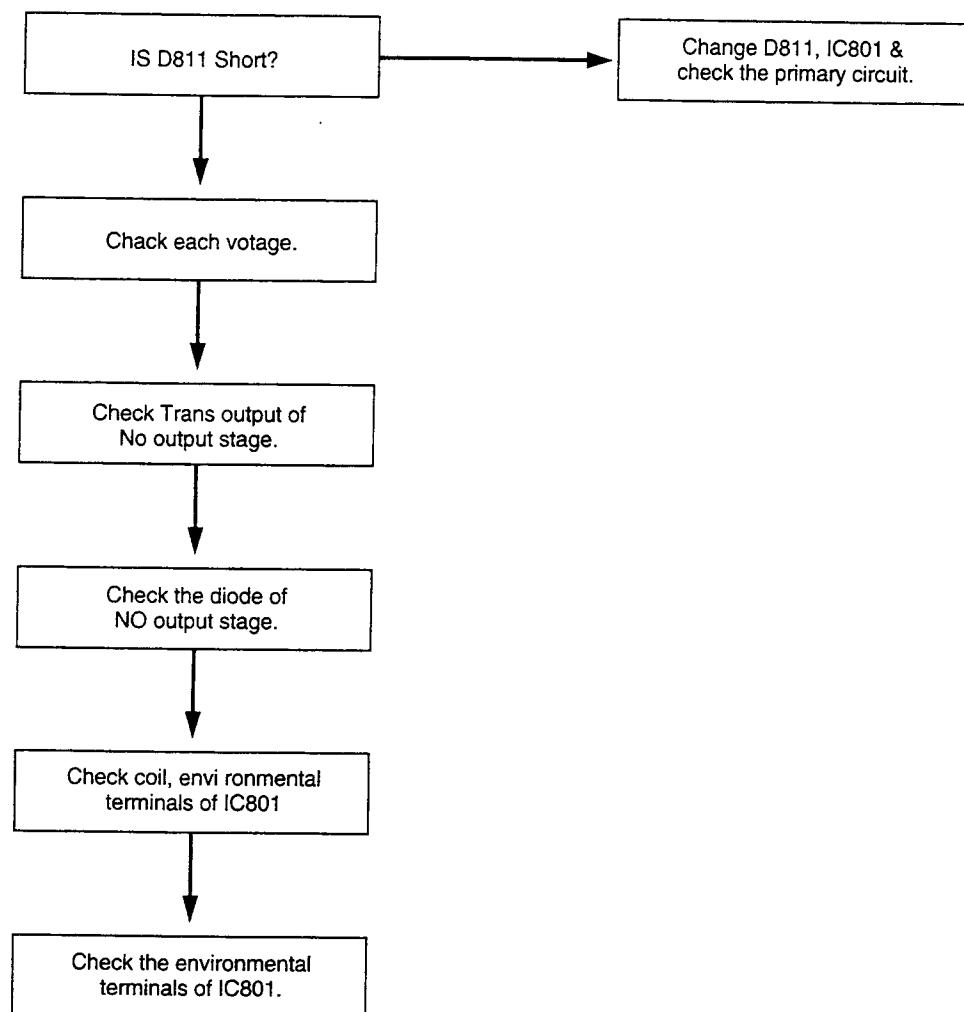
## 3-1. POWER CIRCUIT

- When change the parts which are out of order, first, remove the power plug from the socket and then discharge the voltage across between both terminals of C807. (Use an external scores of  $K\Omega$  resistance)
- When check the primary circuit by using the oscilloscopes insulate the oscilloscope surely. (Use the isolating transformer) and must connect GND into the primary GND, (But there is no connection when check the secondary circuit).
- When change IC801, check FUSE and Cement resistance surely.

### A. CHECKING THE PRIMARY CIRCUIT.

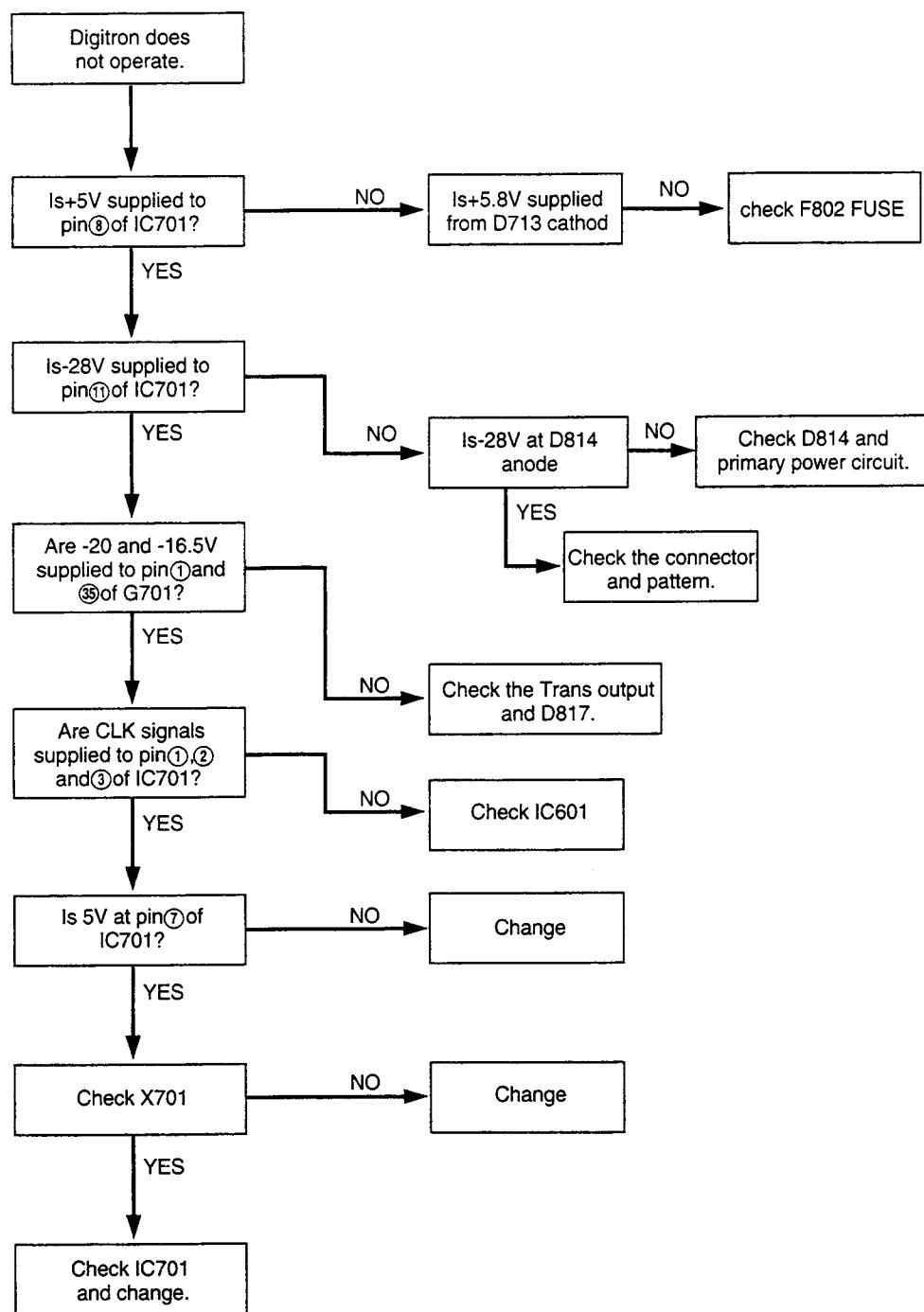


## B. CHECKING THE SECONDARY CIRCUIT.

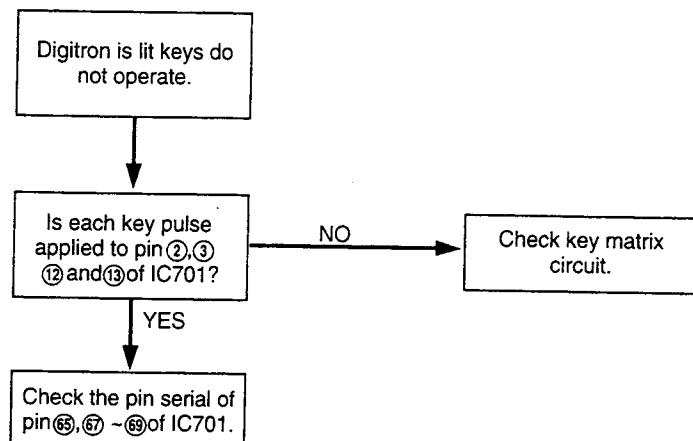


### 3-2. LOGIC CIRCUIT

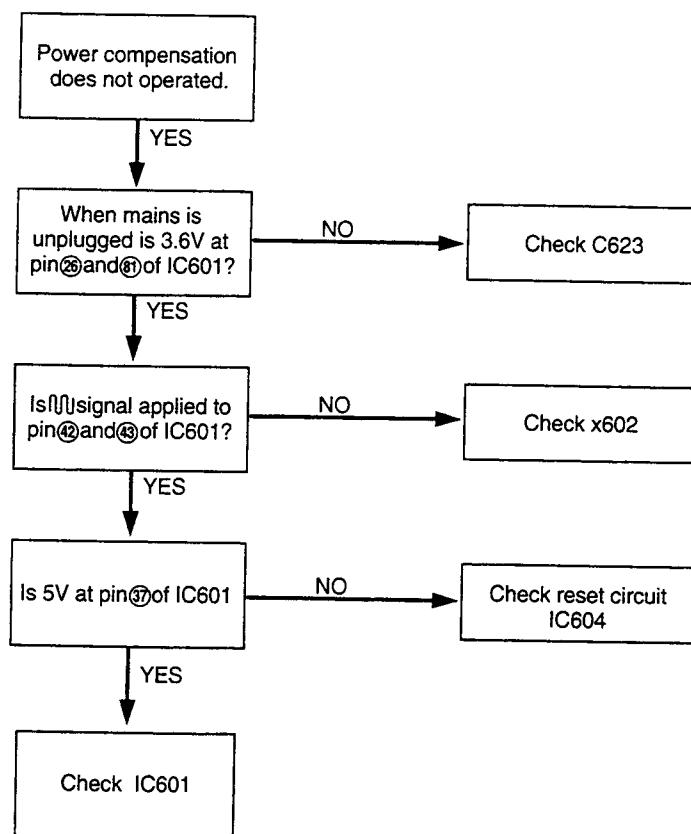
A.



**B.**

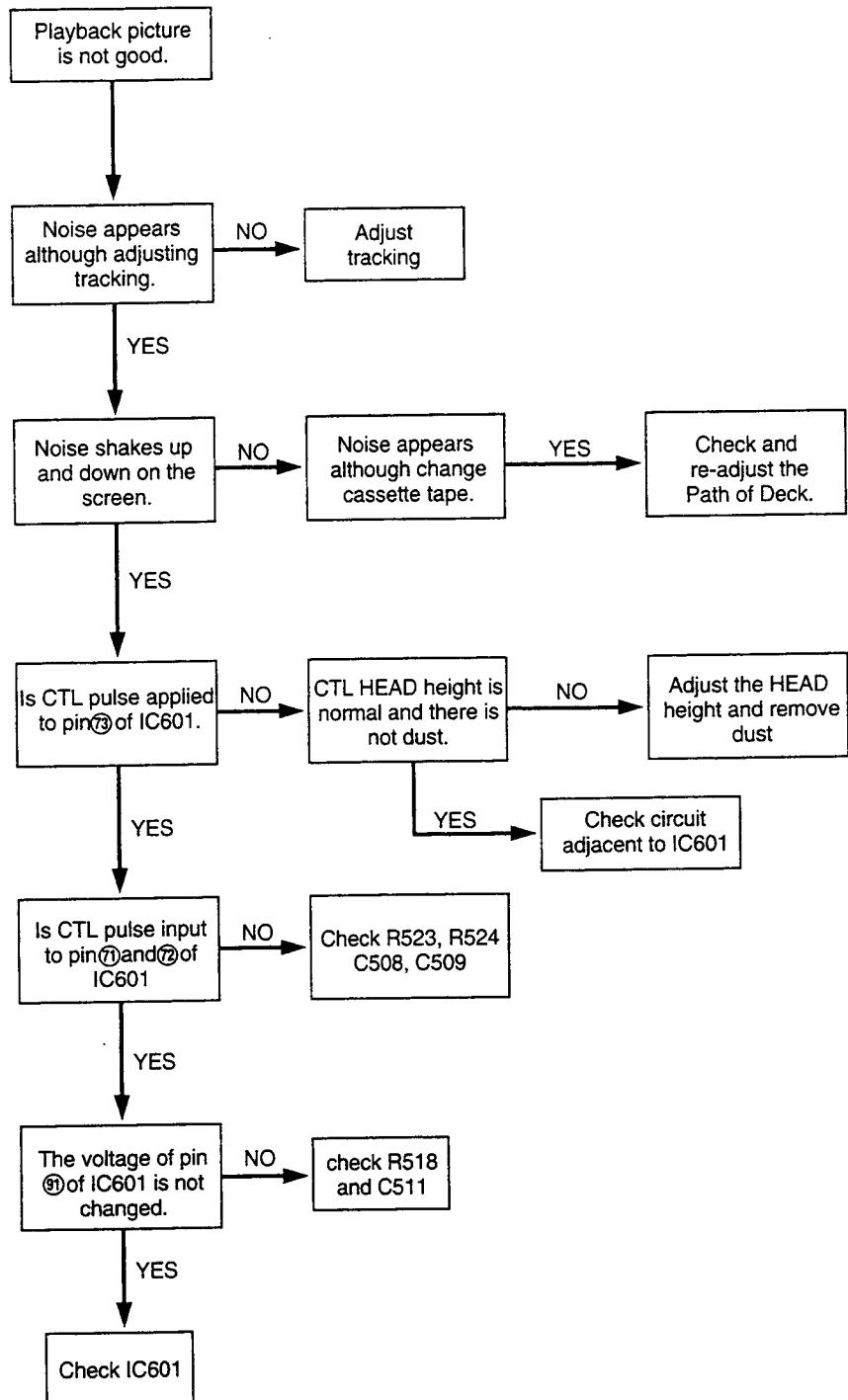


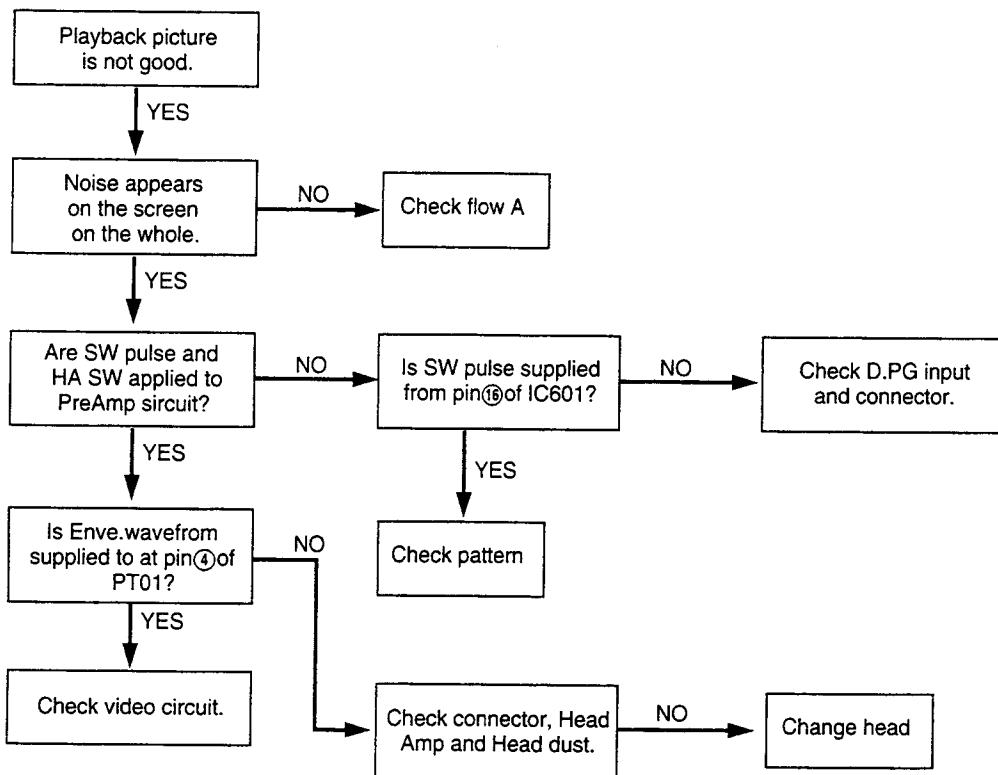
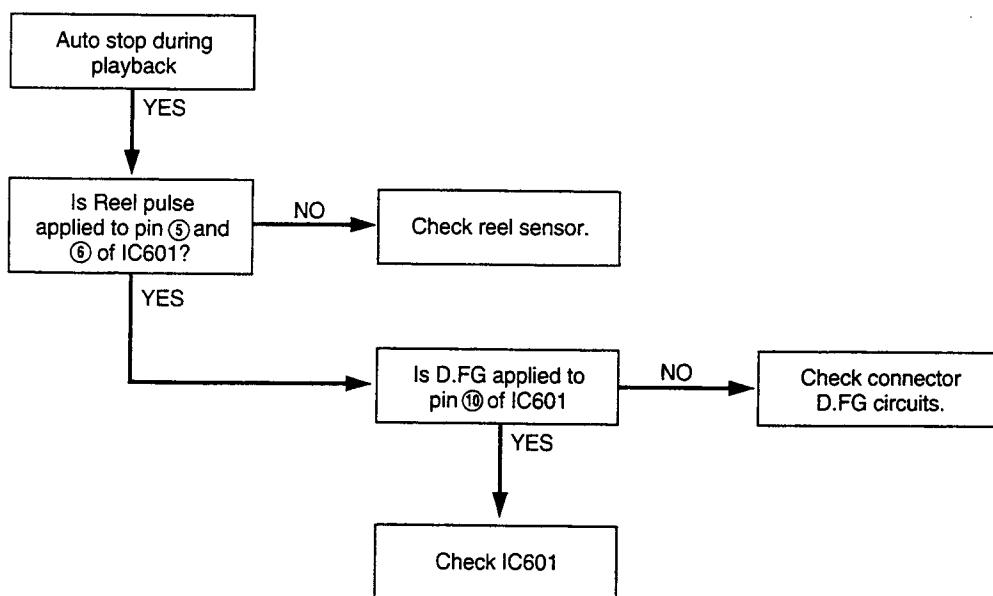
**C.**



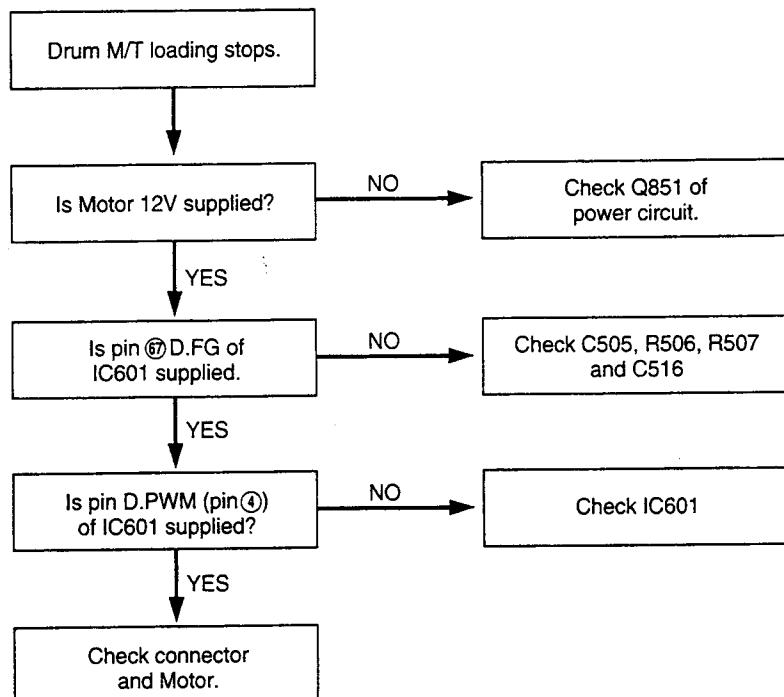
### 3-3. SERVO SYSCON CIRCUIT

A.

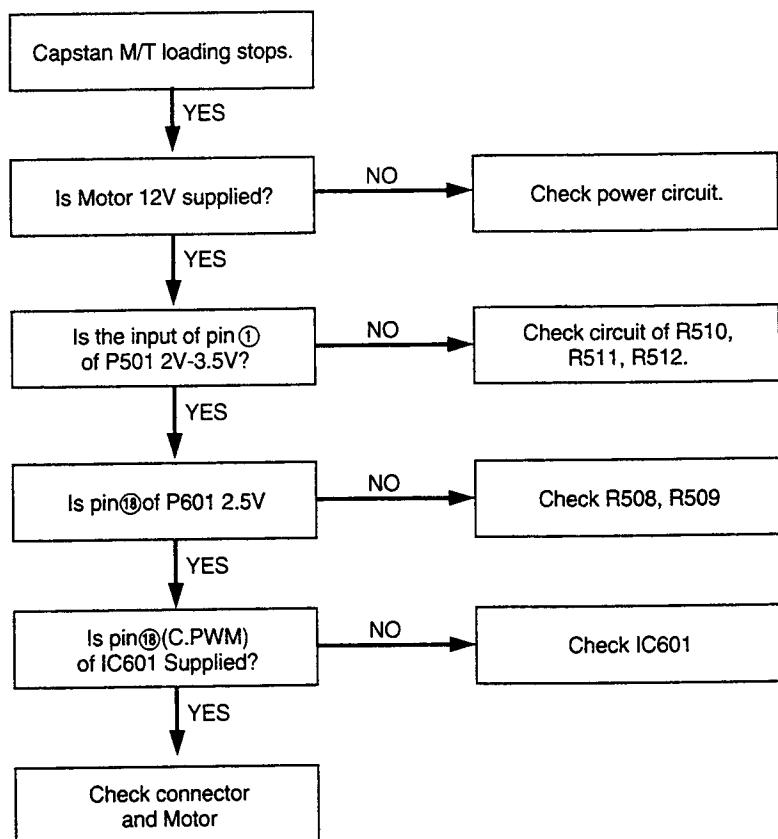


**B.****C.**

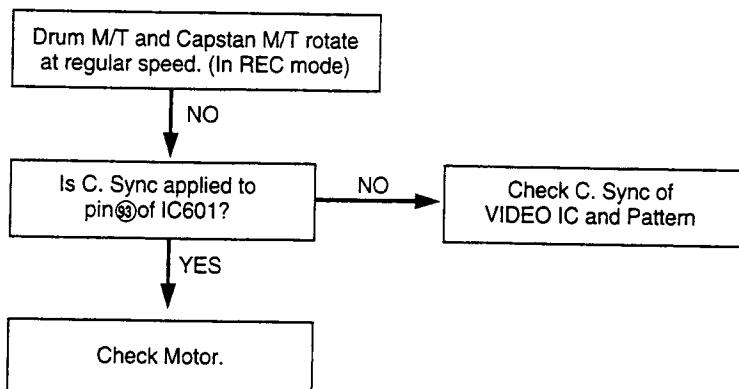
D.



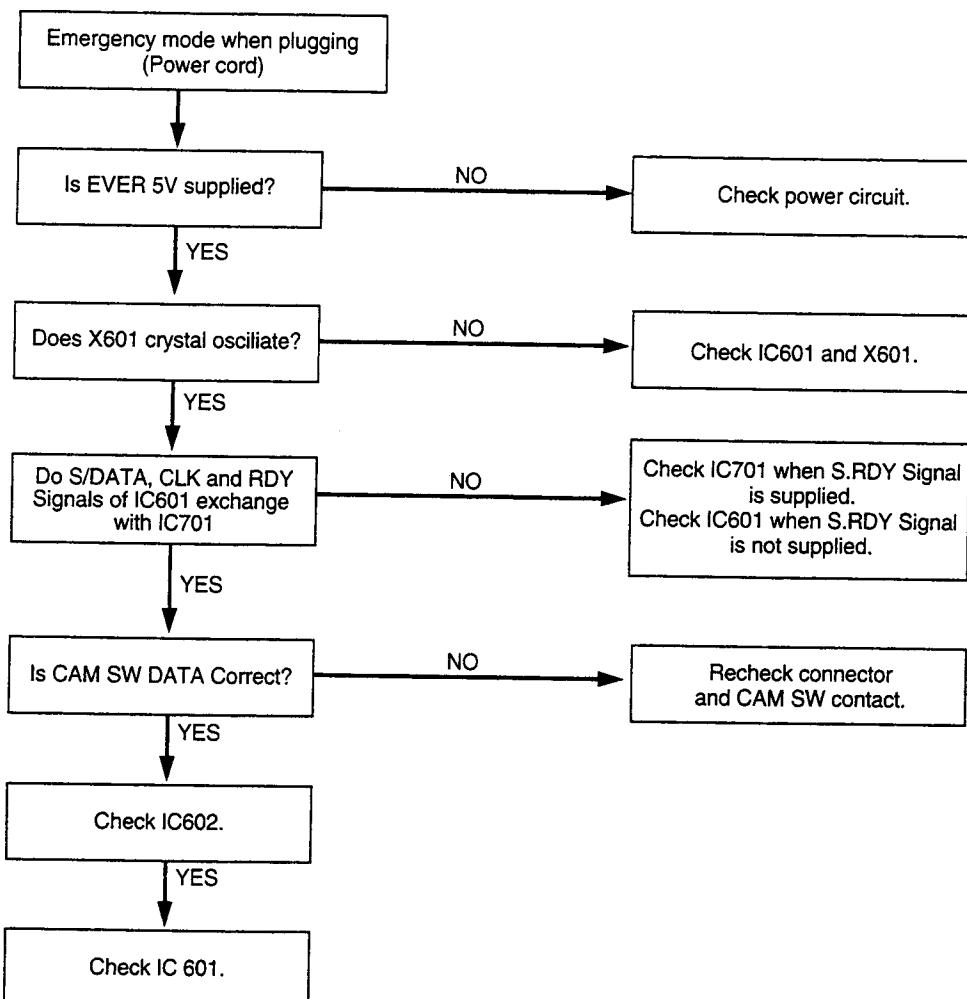
E.



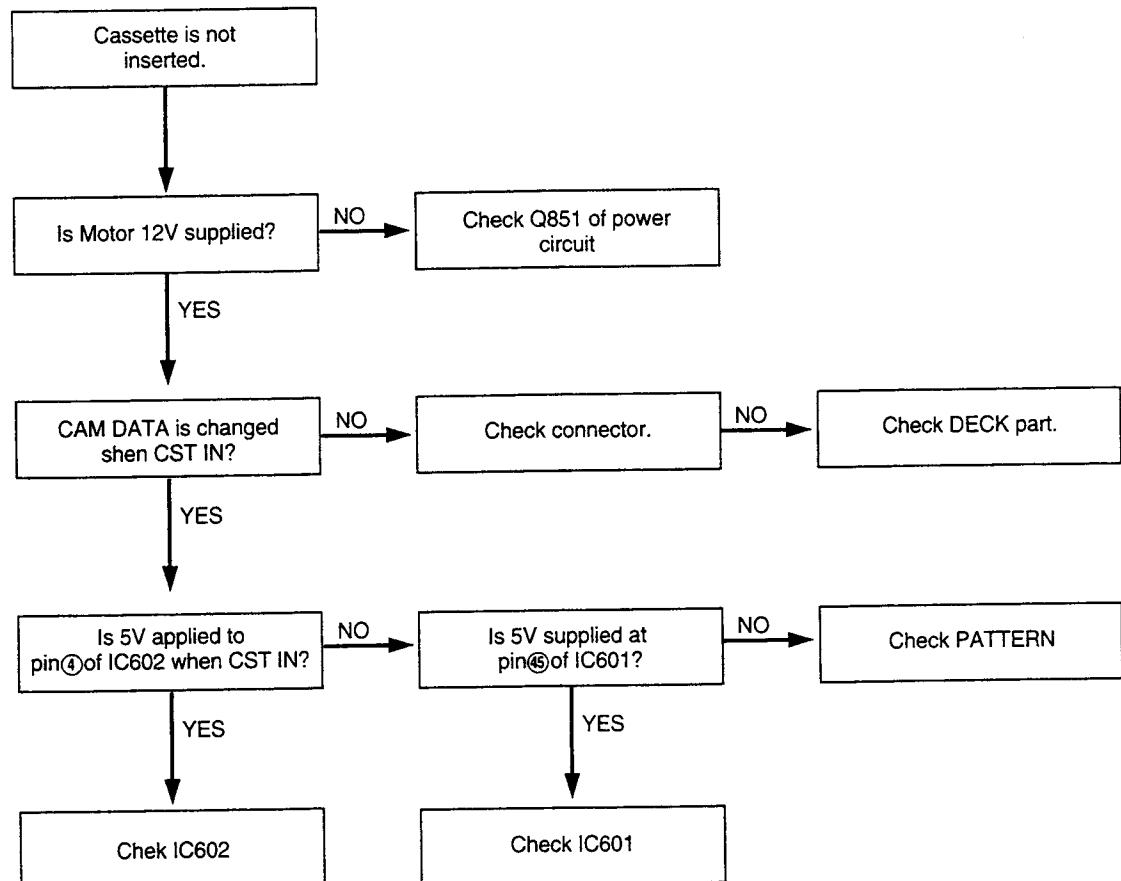
## F.



## G.

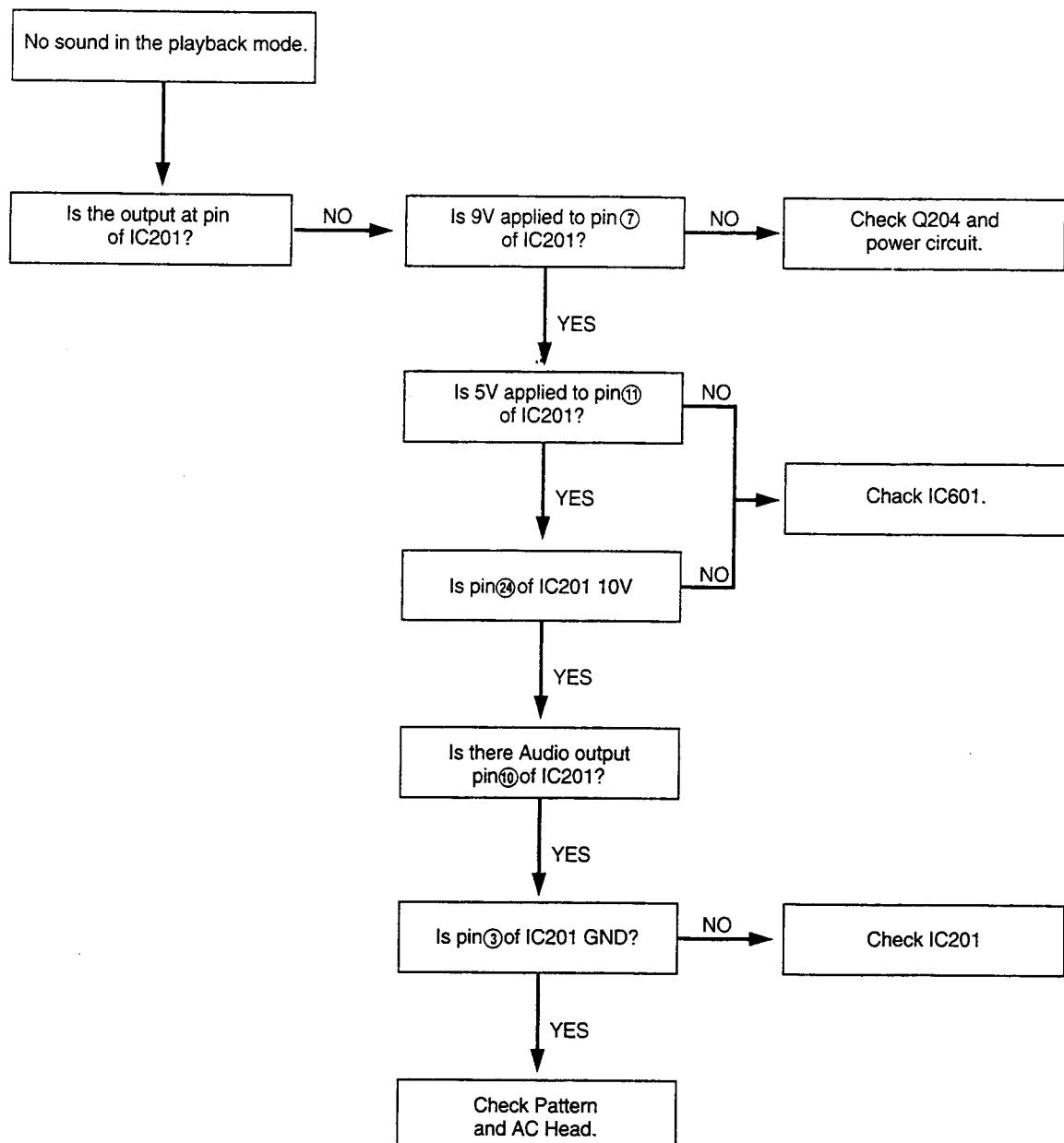


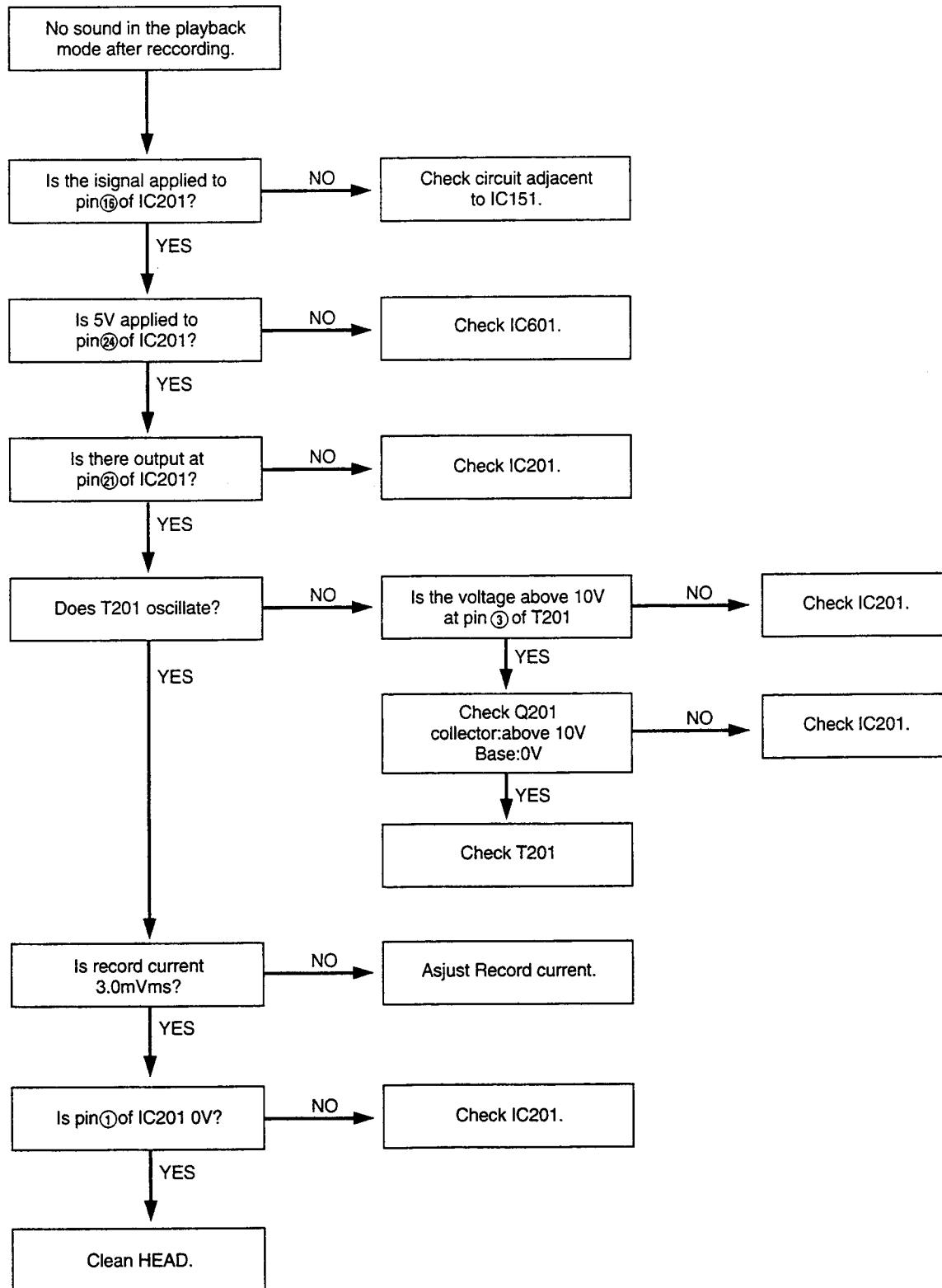
## H.



### 3-4. AUDIO CIRCUIT

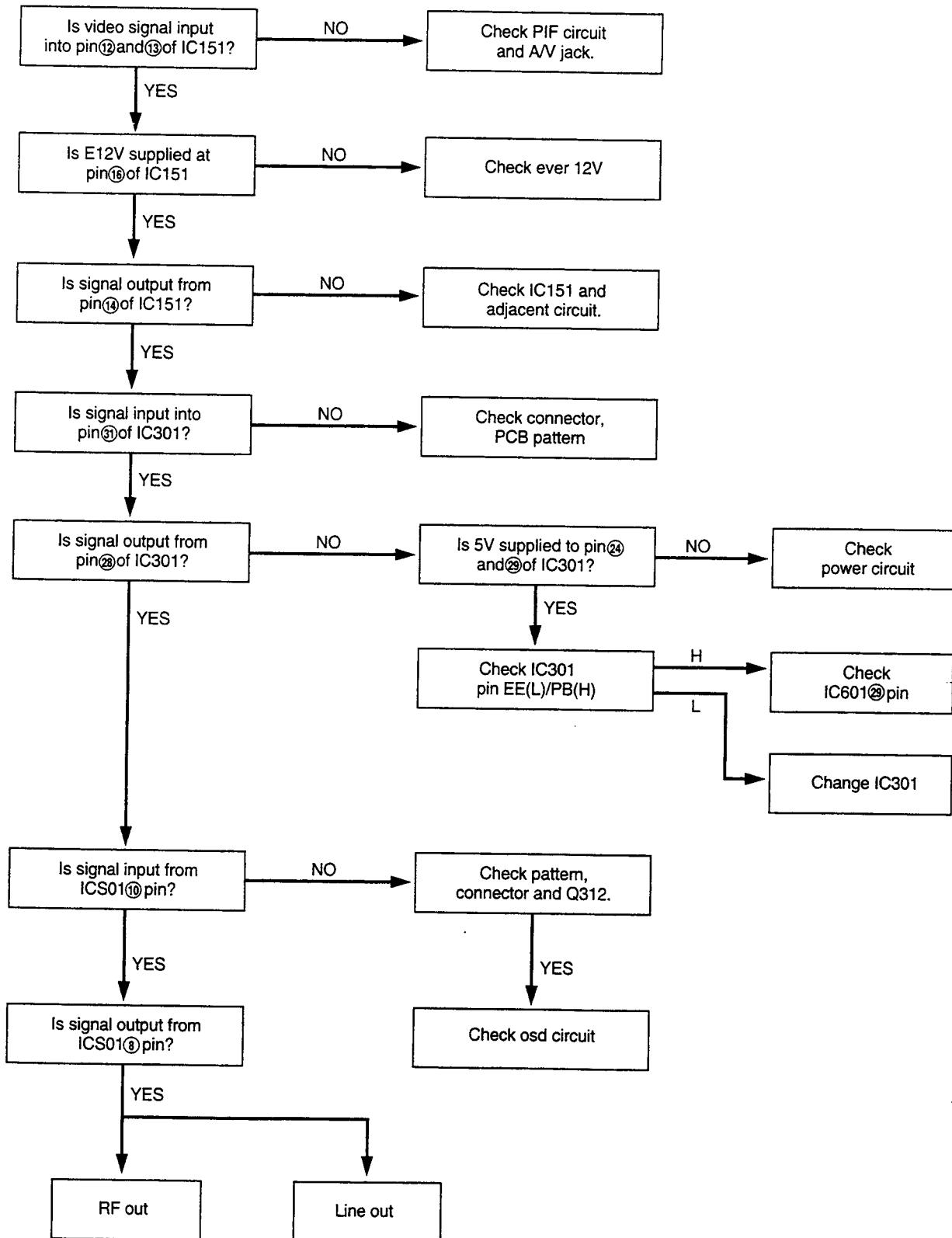
A



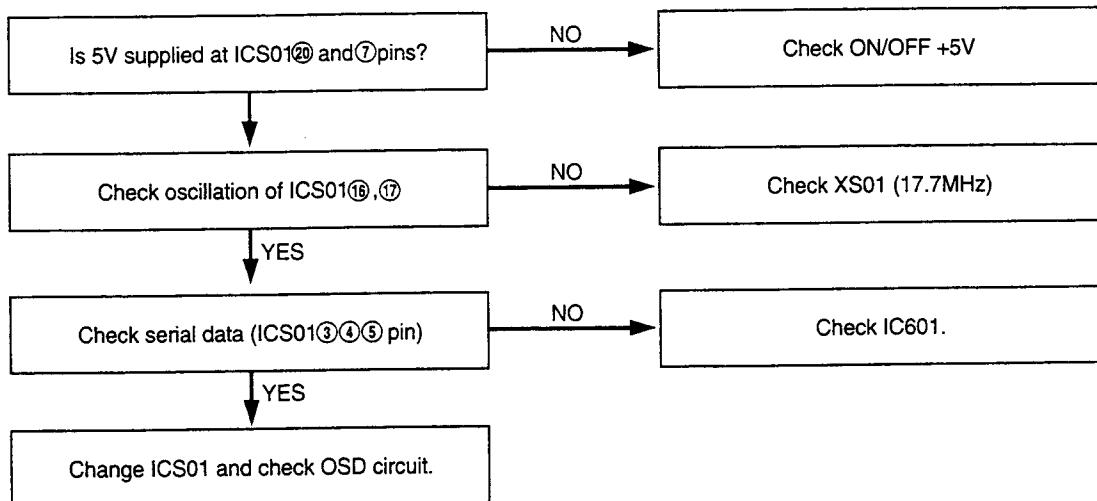
**B**

### 3-5. VIDEO CIRCUIT

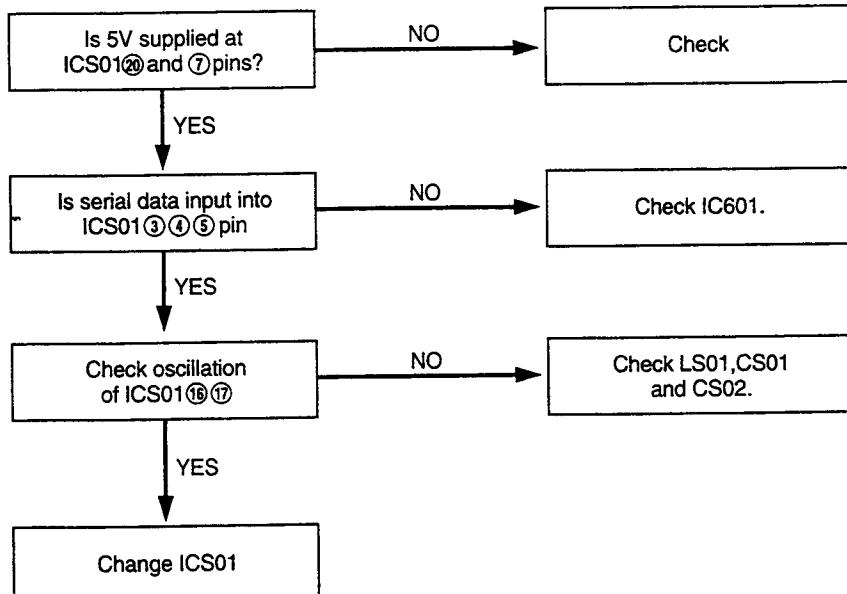
#### A.EE MODE Picture N.C



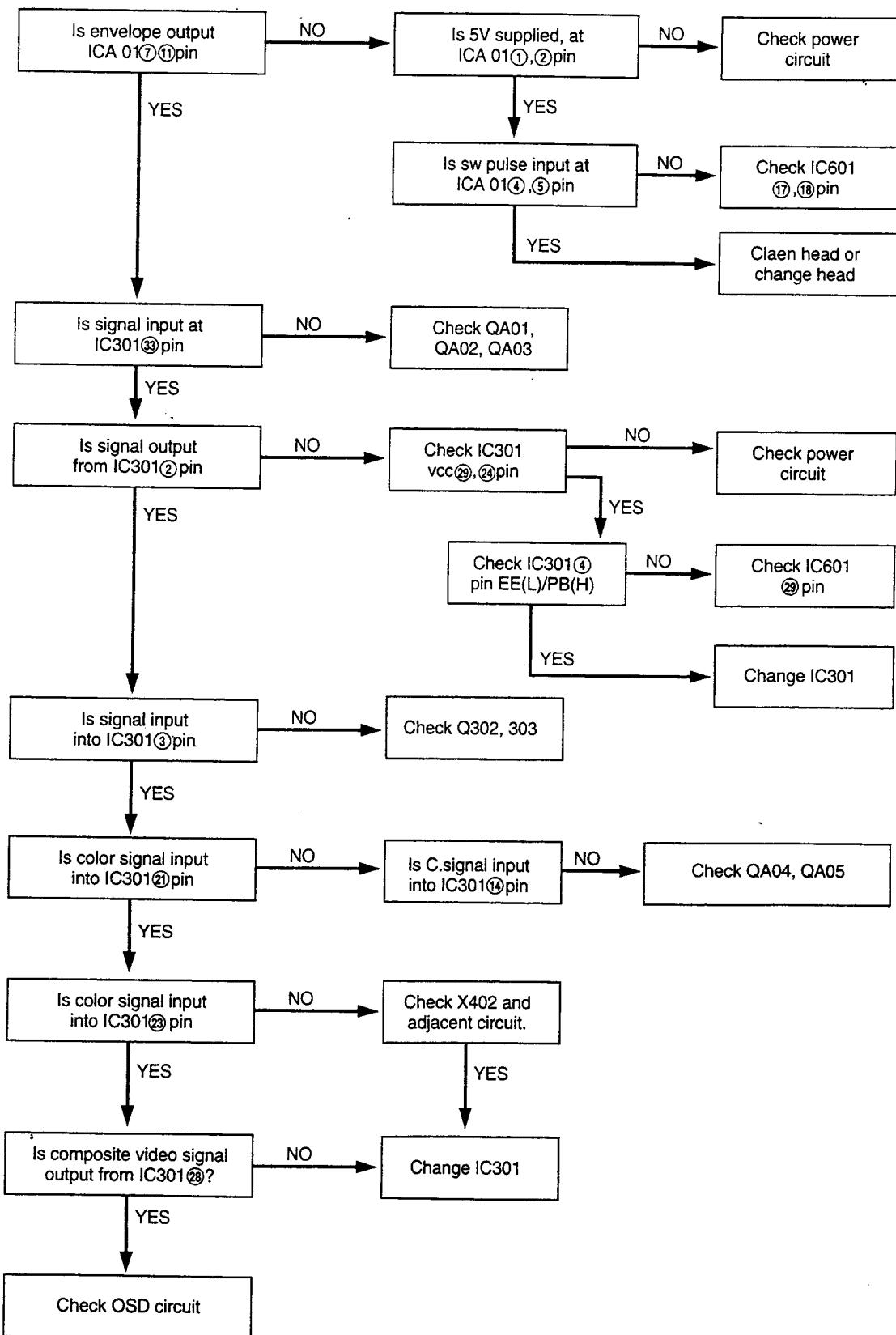
## B . OSD Character N.G



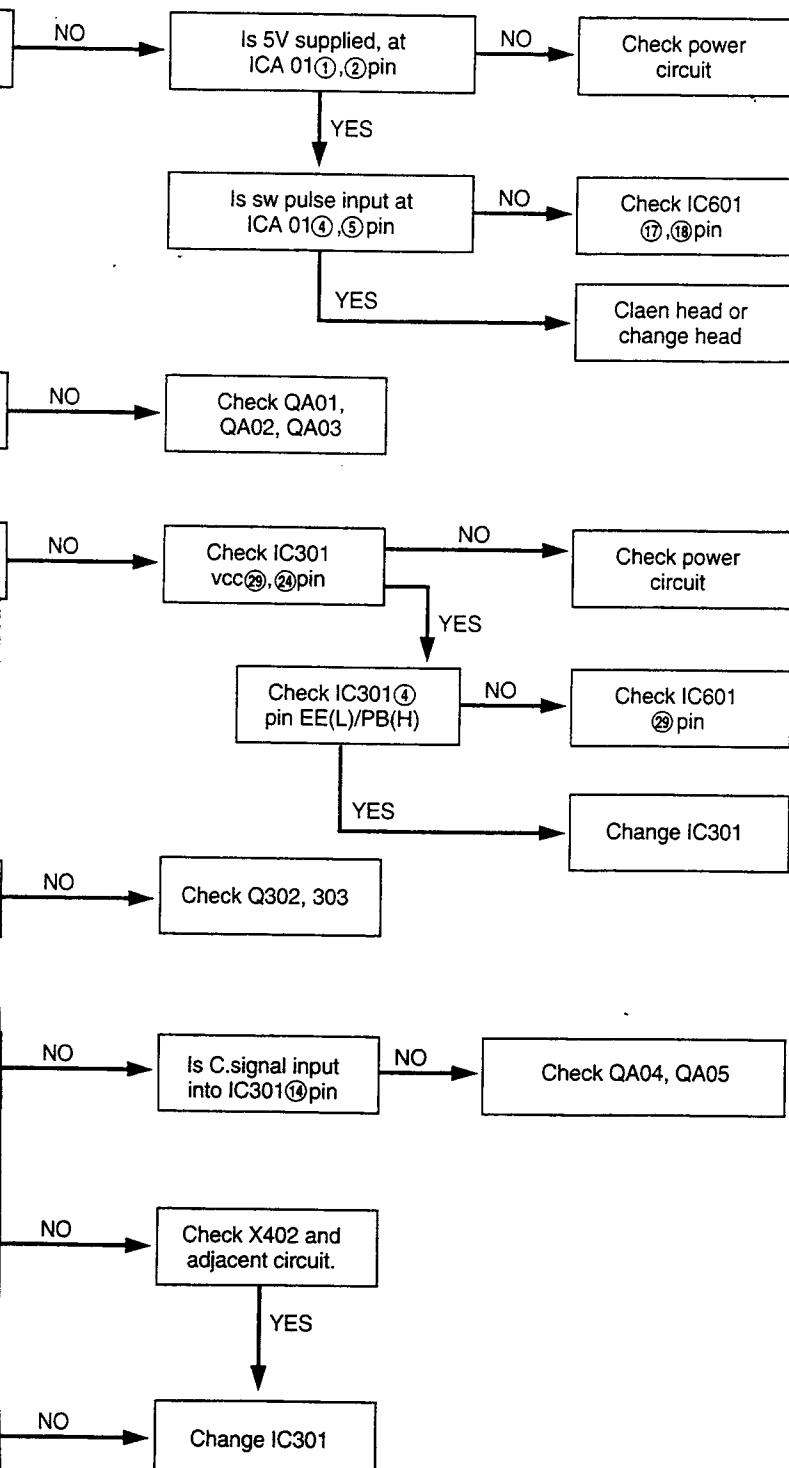
## C. OSD Character N.G



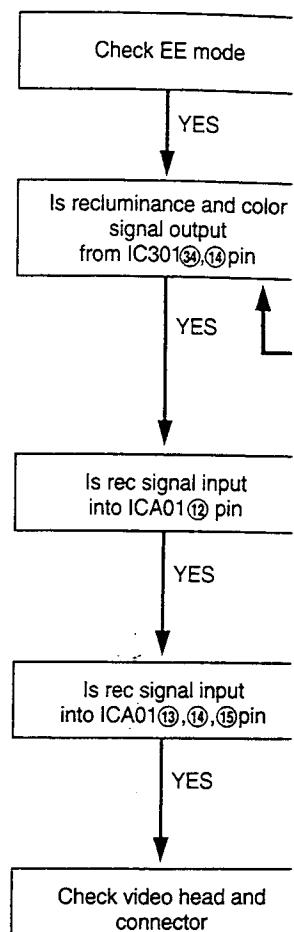
## D. PB VIDEO SIGNAL N.G



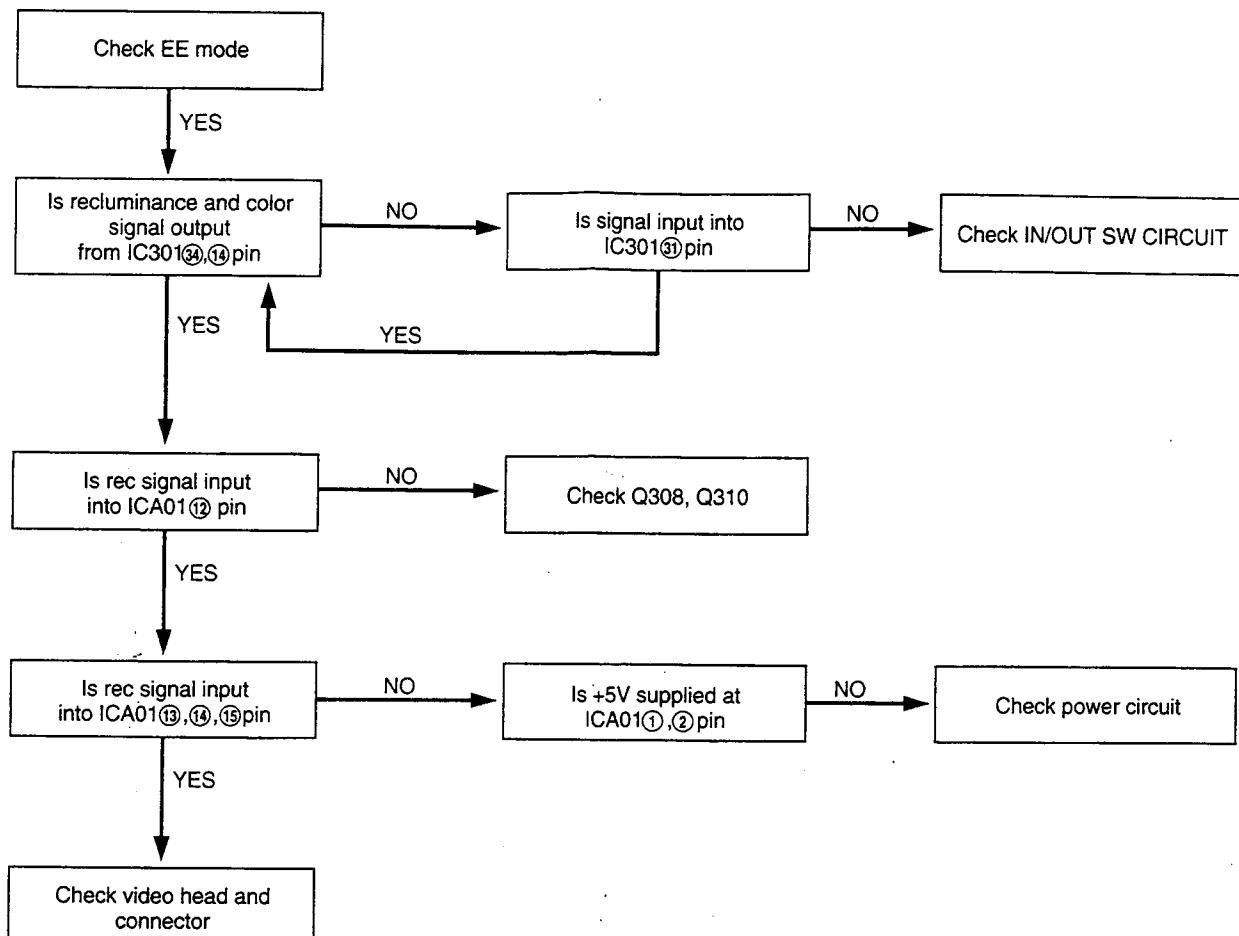
## NAL N.G



## E. REC SIGNAL 1

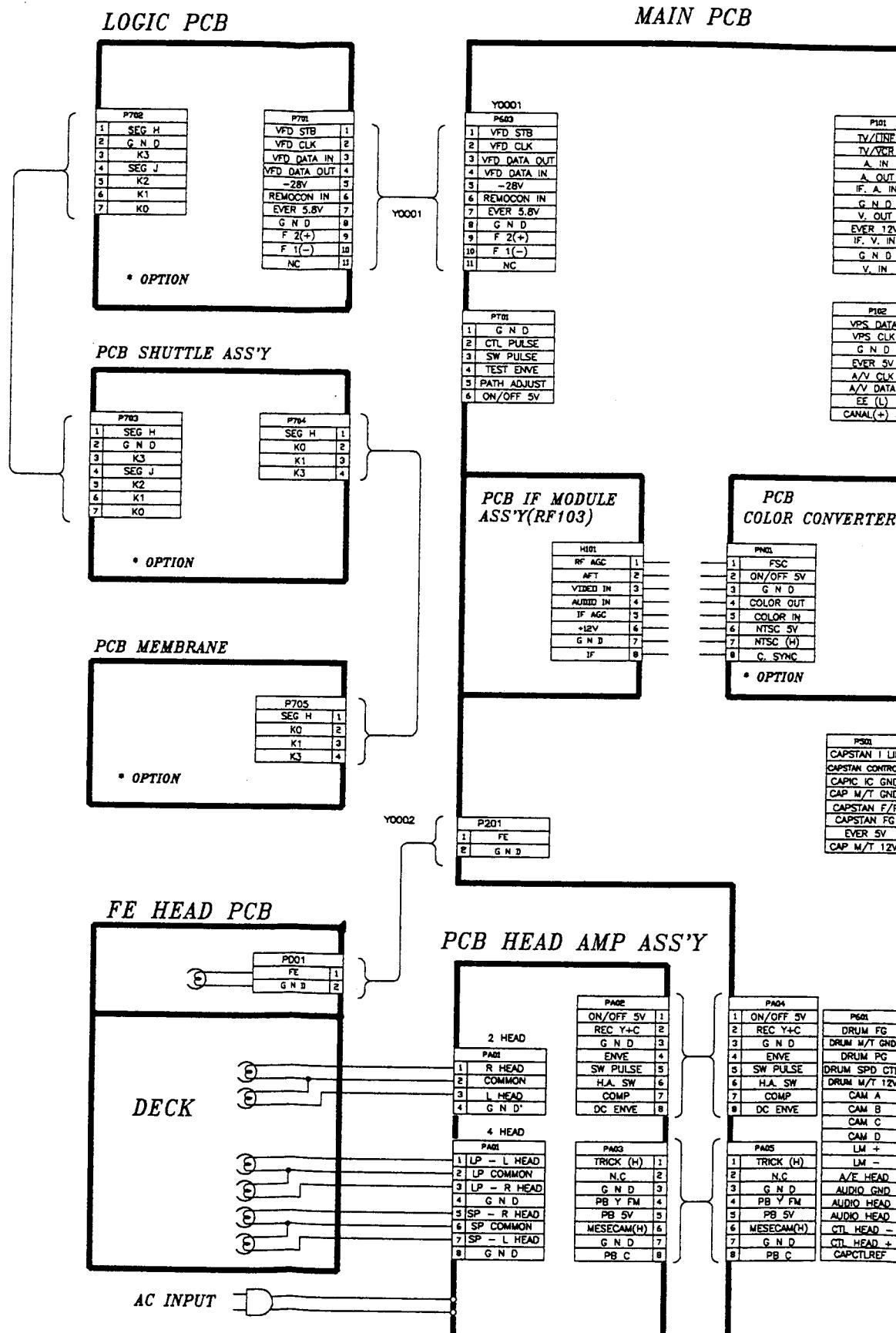


## E. REC SIGNAL N.G



# SECTION 4. CIRCUIT DIAGRAM

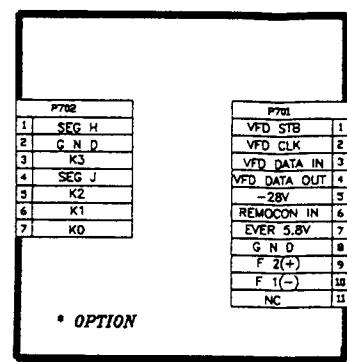
## 4-1. CONNECTION DIAGRAM CIRCUIT



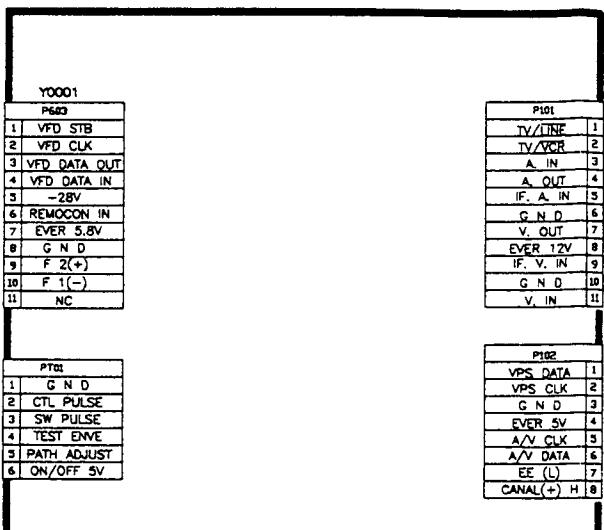
# CIRCUIT DIAGRAM

## CIRCUIT DIAGRAM

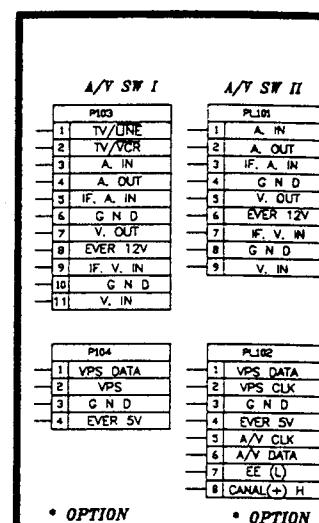
### LOGIC PCB



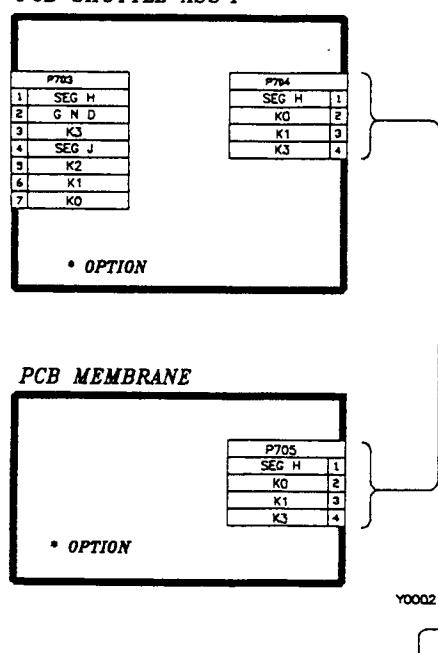
### MAIN PCB



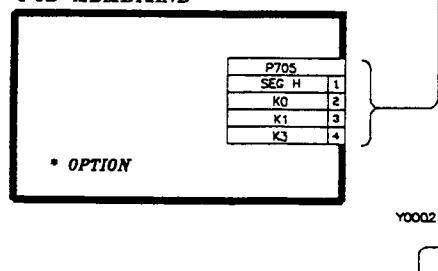
### PCB A/V SW ASS



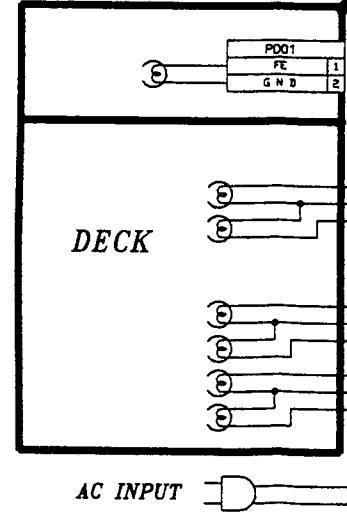
### PCB SHUTTLE ASS'Y



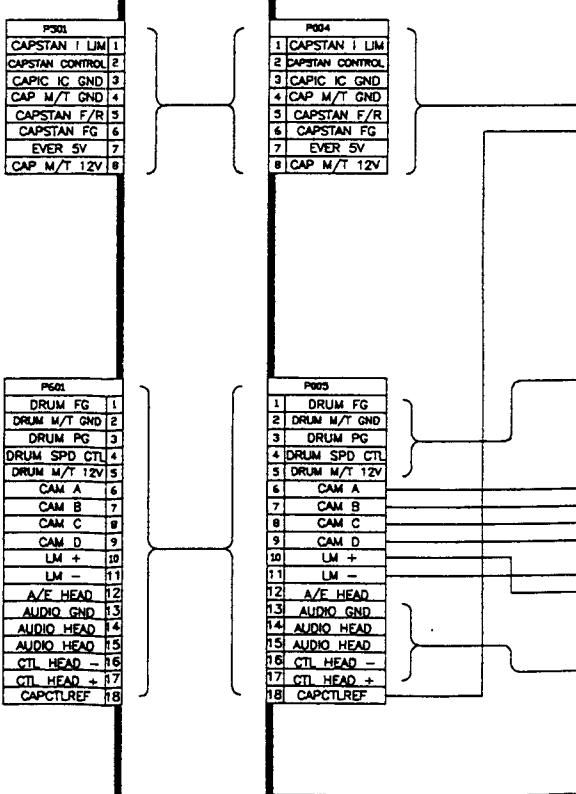
### PCB MEMBRANE



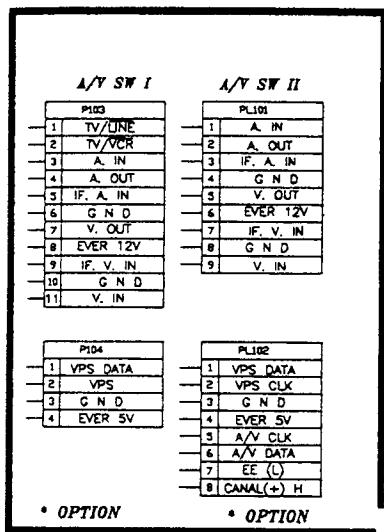
### FE HEAD PCB



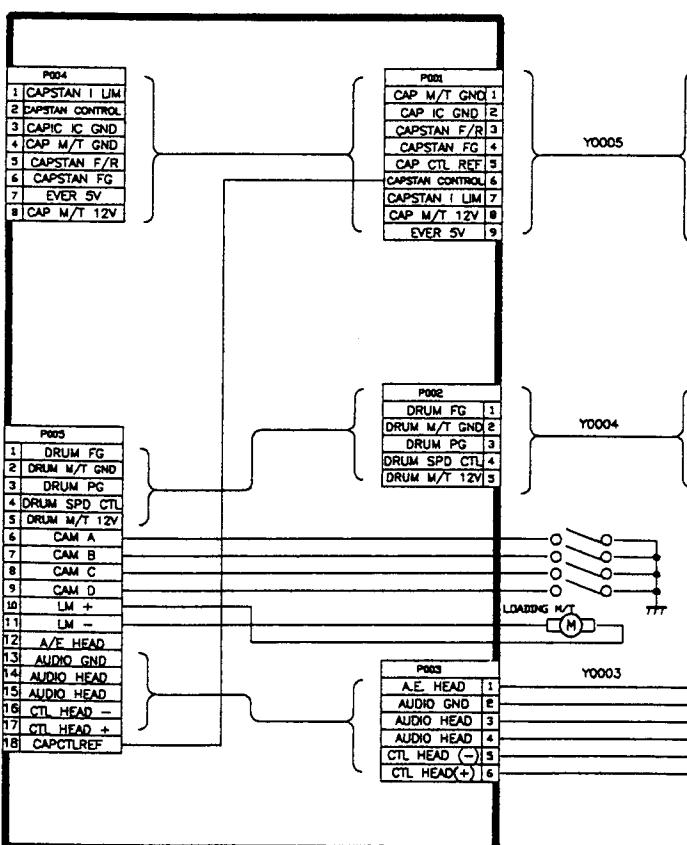
### DECK INTERFACE 1



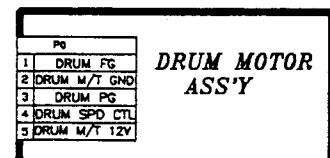
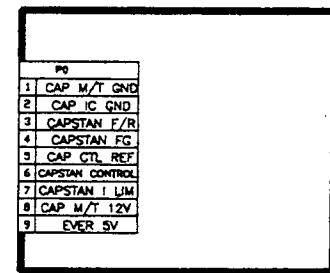
## PCB A/V SW ASS'Y



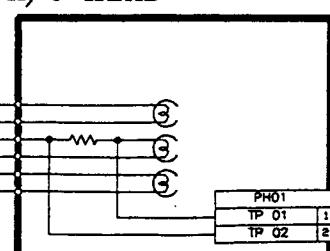
## DECK INTERFACE PCB



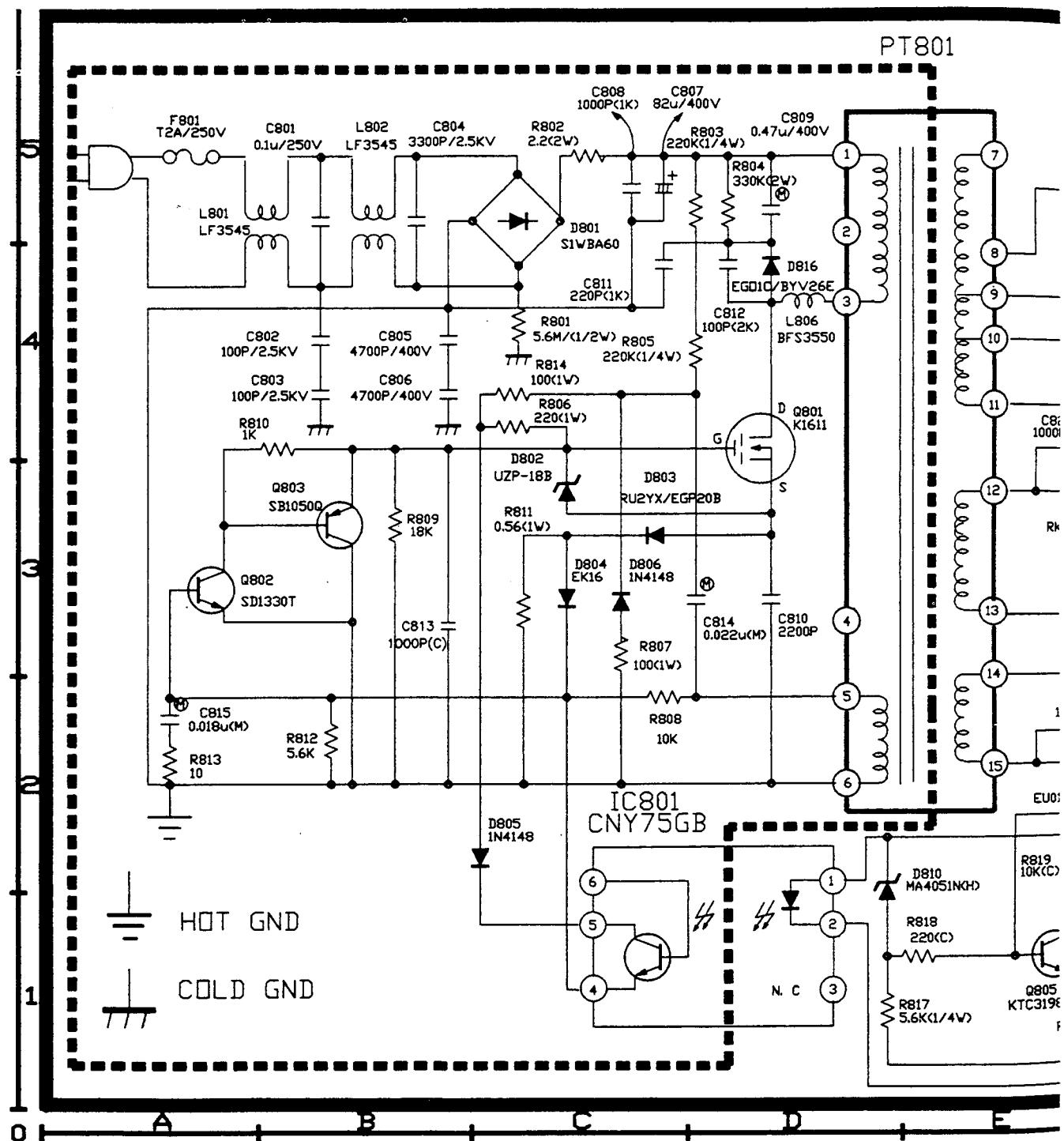
## CAPSTAN MOTOR ASS'Y



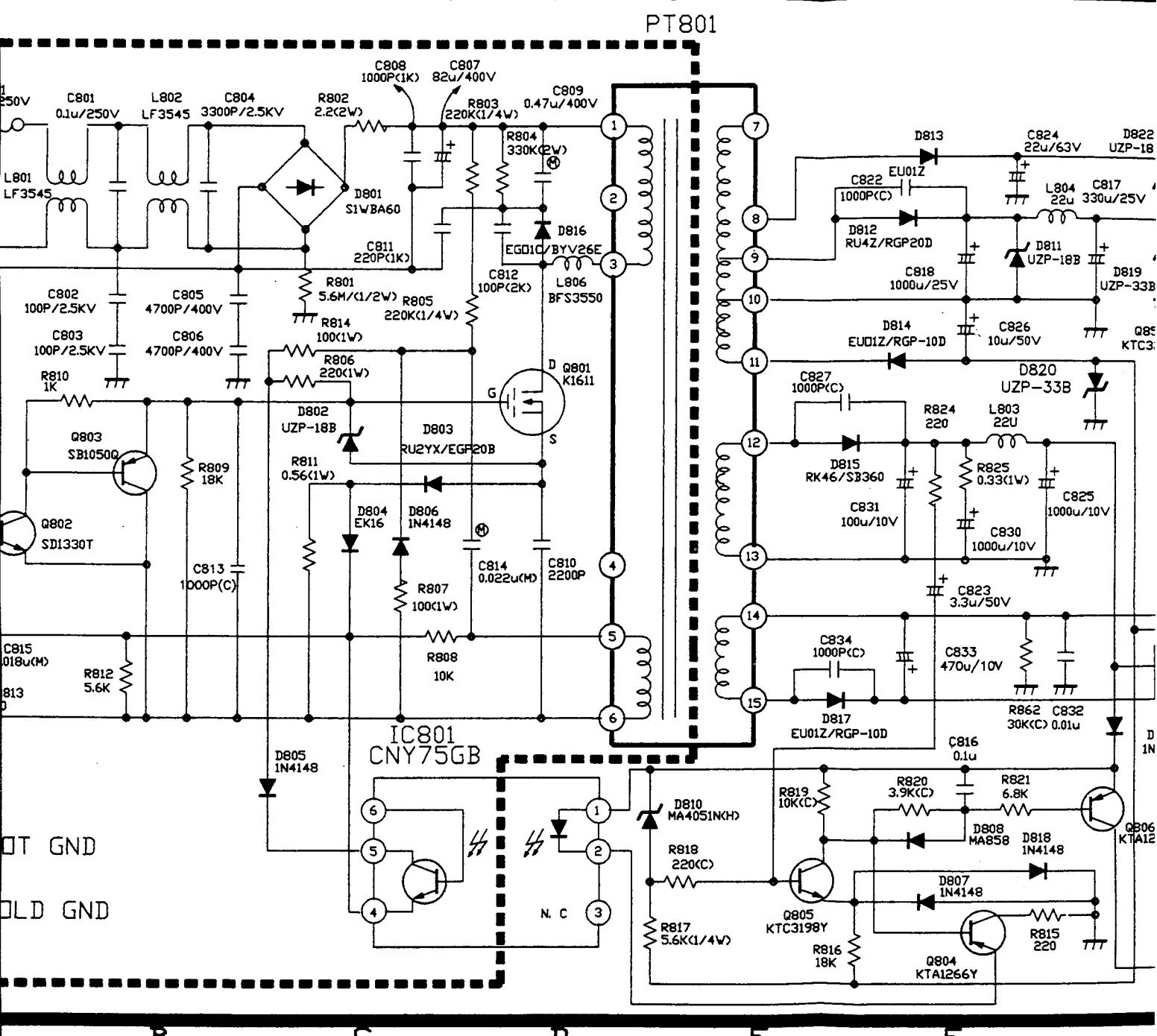
## A/C HEAD

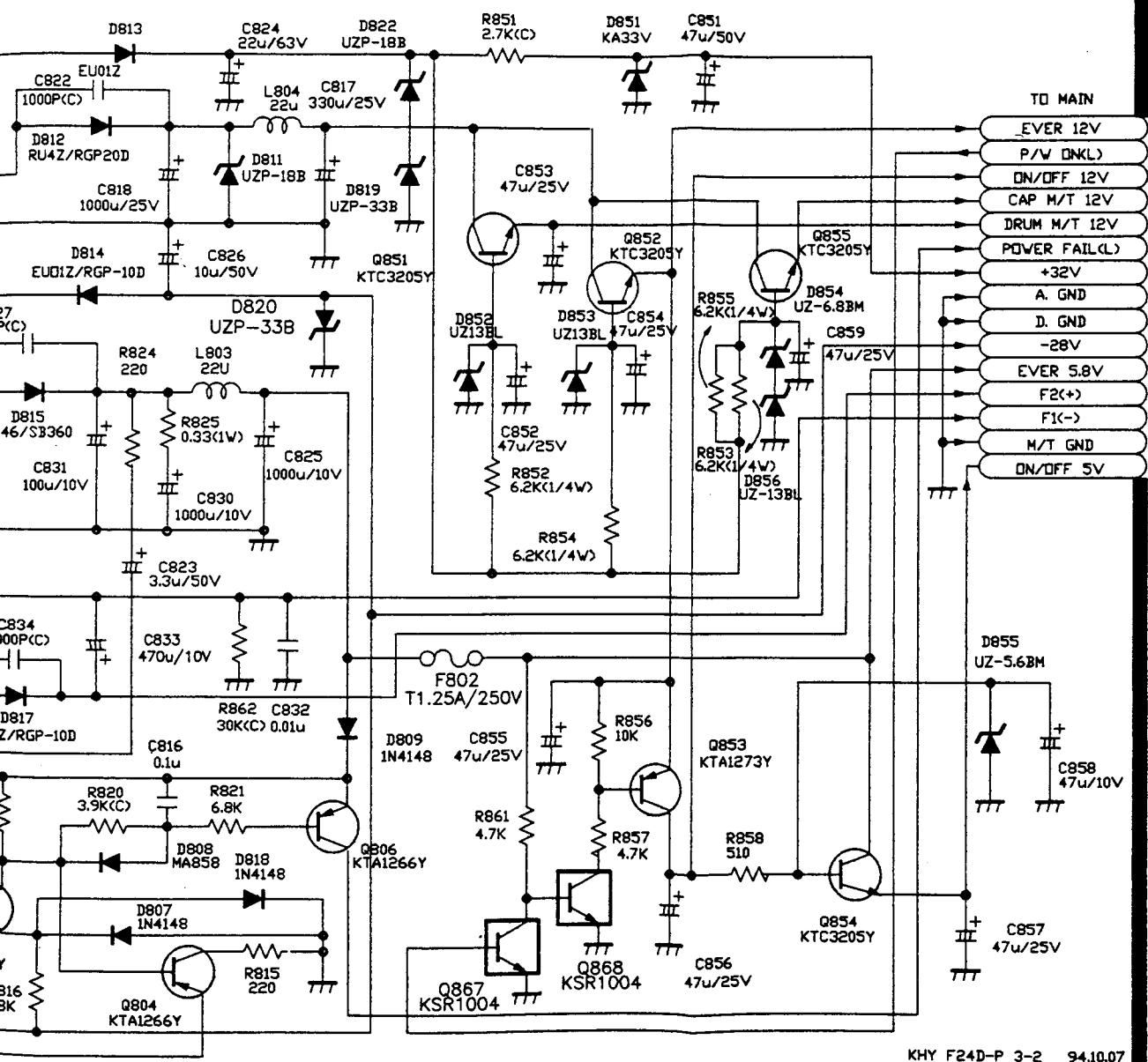


## 4-2. POWER CIRCUIT (SMPS)

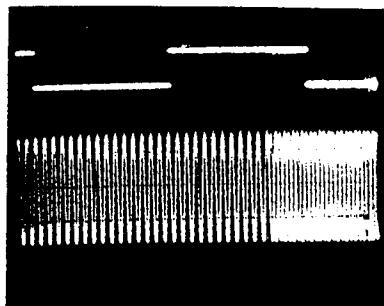


# (SMPS)

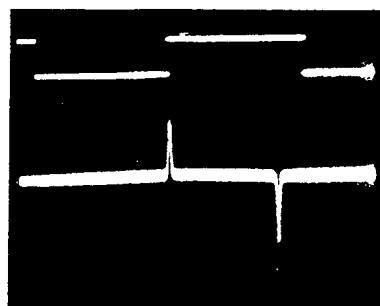




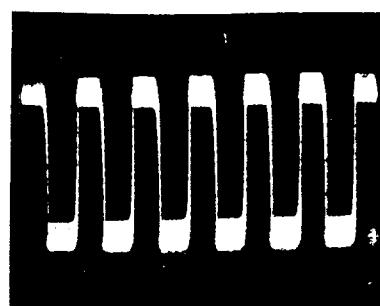
## SERVO-LOGIC CIRCUIT WAVEFORM



⑬ DRUM PG  
(1V/5ms)

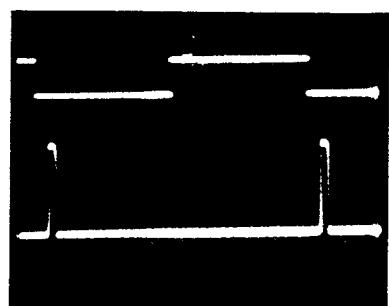


⑭ DRUM FG  
(200mV/1ms)



⑮ CTL AMP OUT  
(1V/5ms)

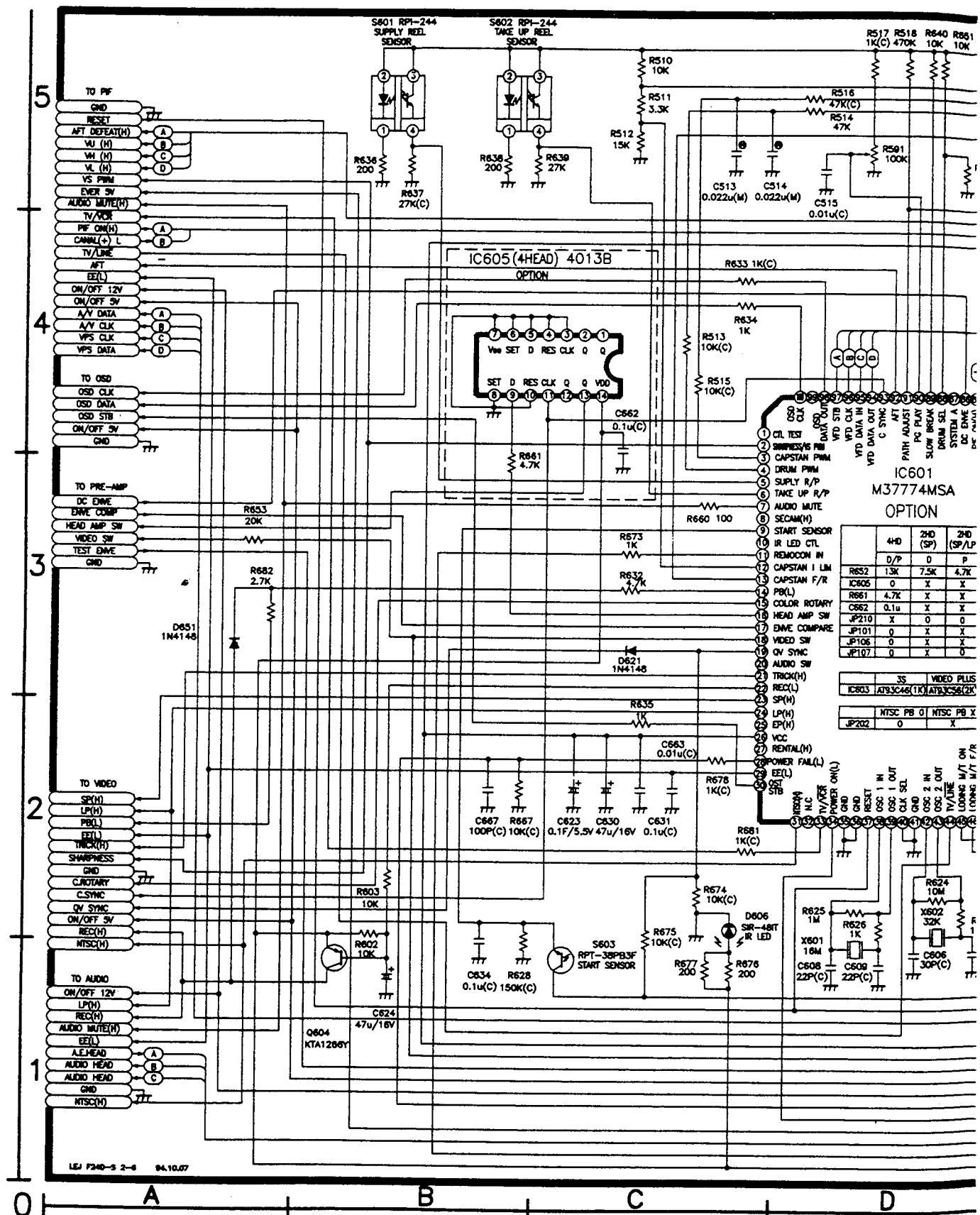
## FM mecha CAM DATA

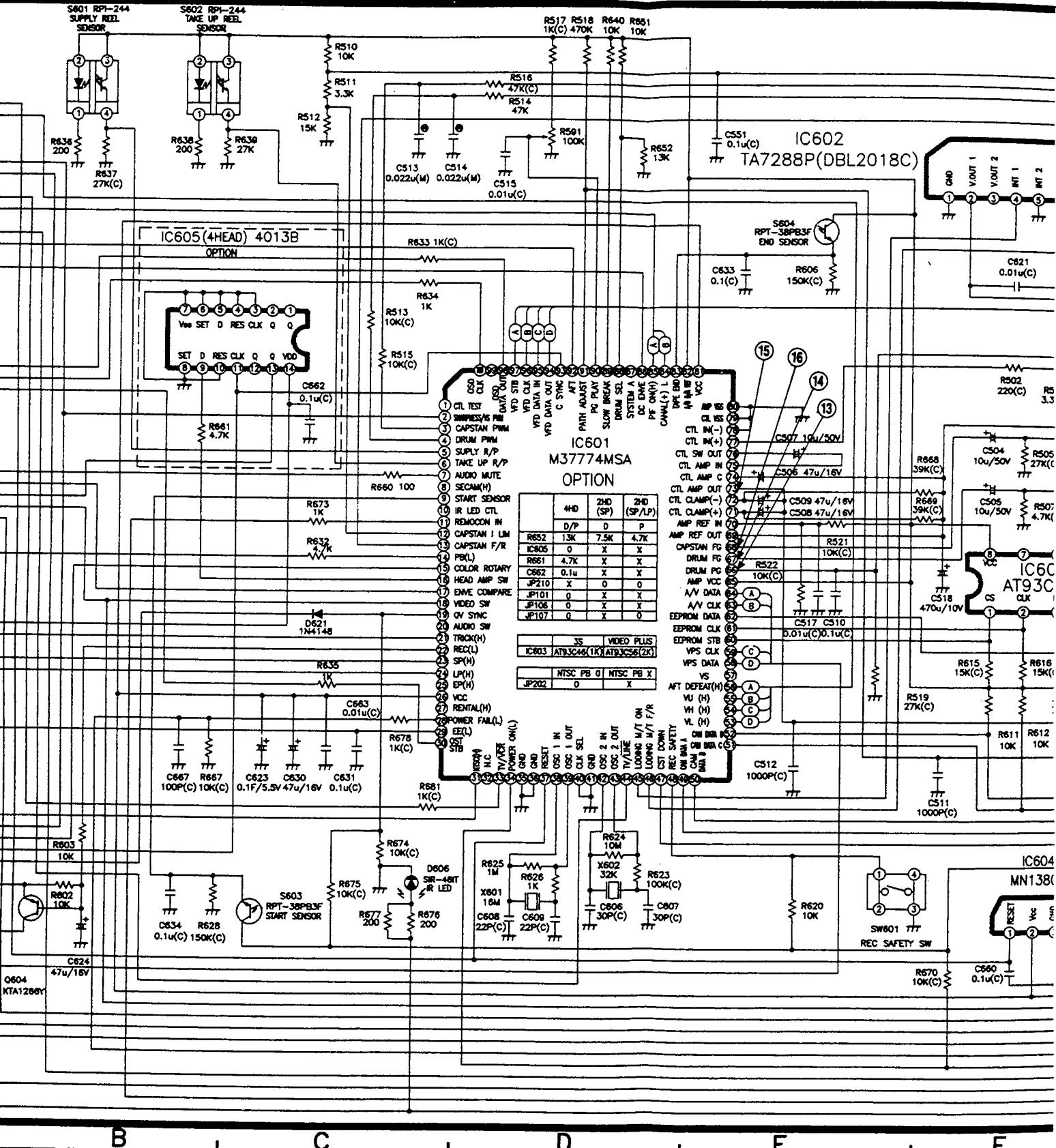


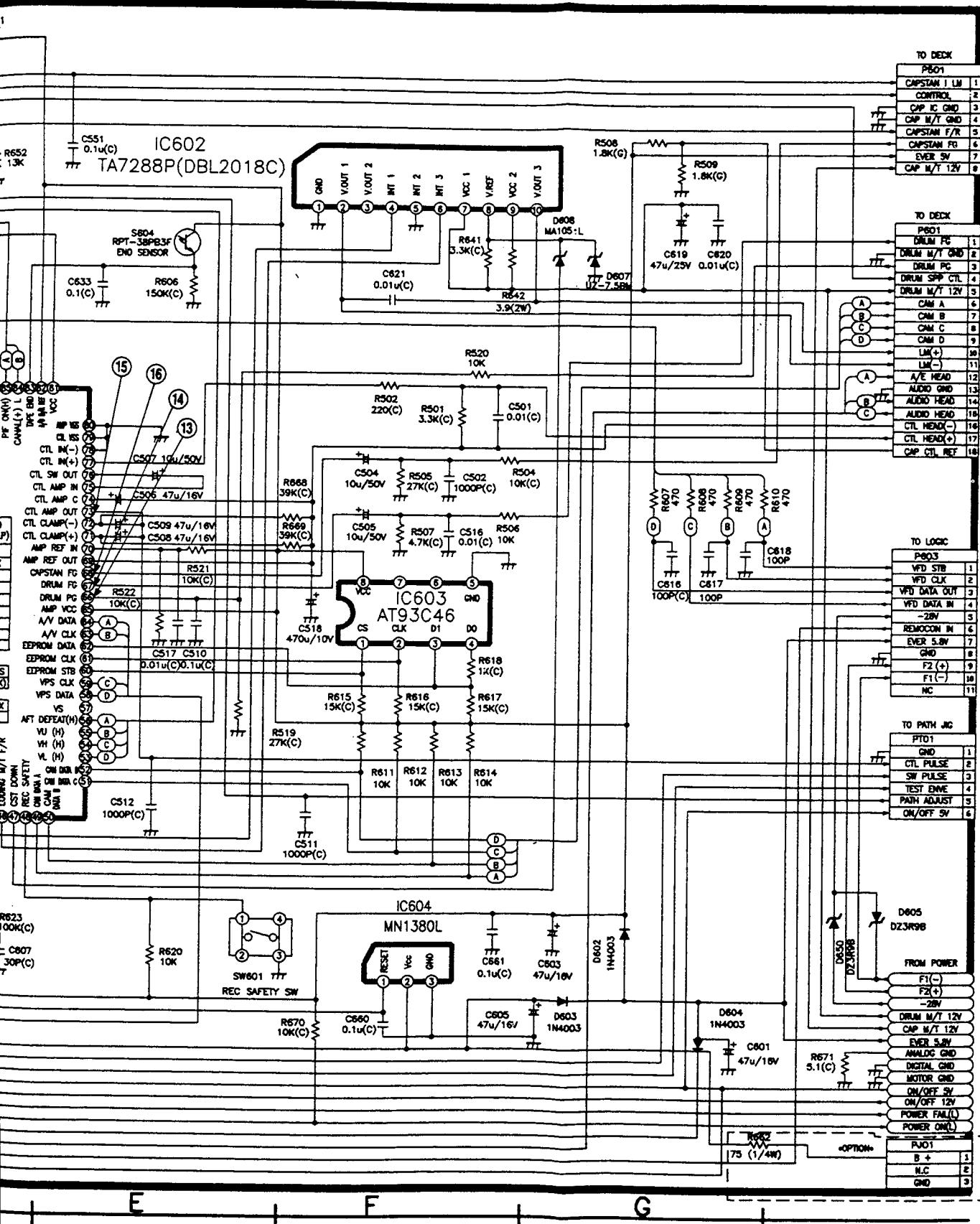
⑯ CAPSTAN FG  
(1V/5ms)

Mode	CAM	CAM A	CAM B	CAM C	CAM D
Eject		H	H	H	L
High-REW		H	H	L	L
STAND		H	H	L	H
IDLE		H	L	L	H
REV		H	L	H	H
SLOW		L	L	L	H
STOP/PLAY		L	H	H	H
FF/REW		L	L	H	H
FLOAT		H	H	H	H

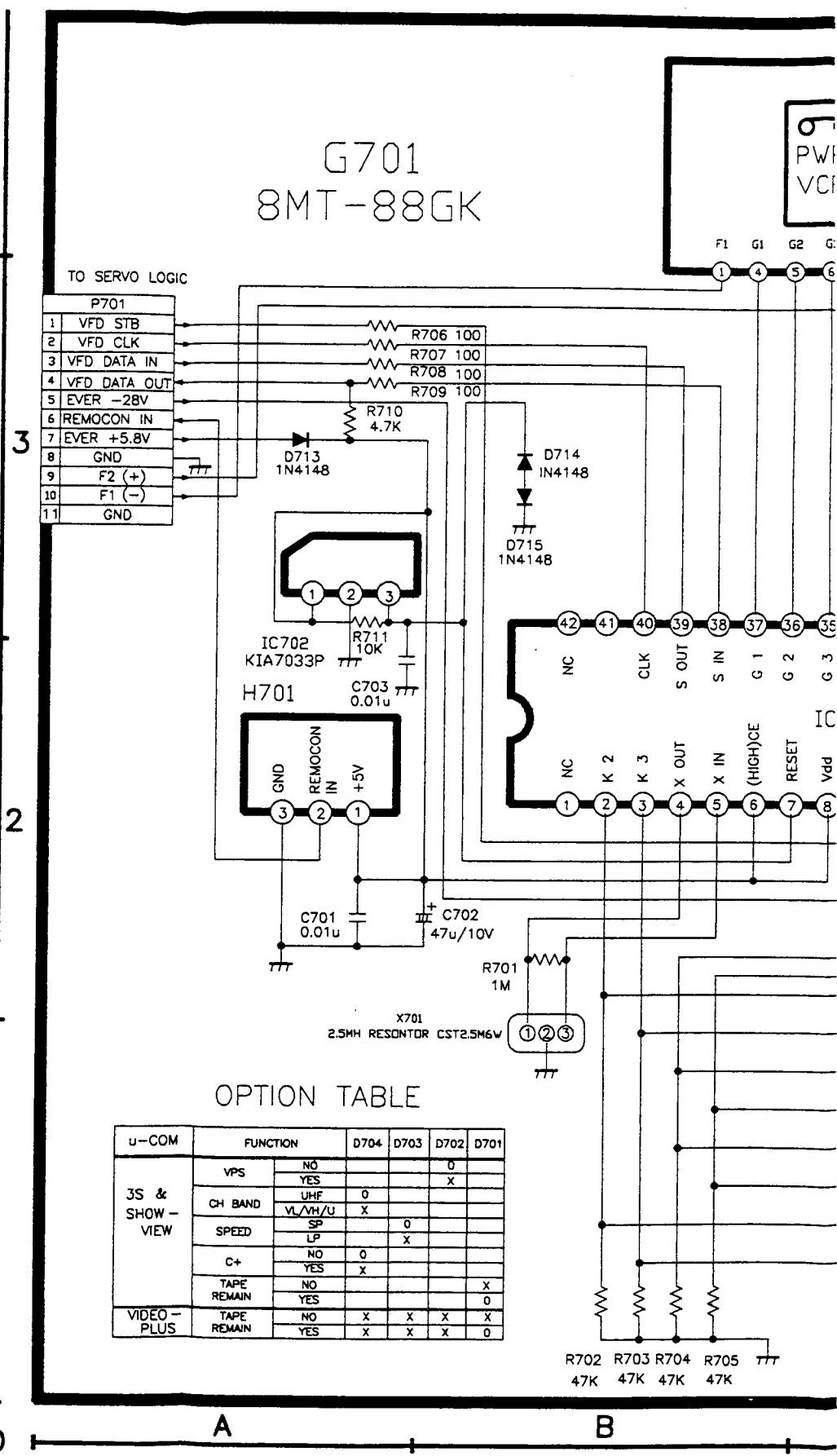
### 4-3. SERVO-LOGIC CIRCUIT



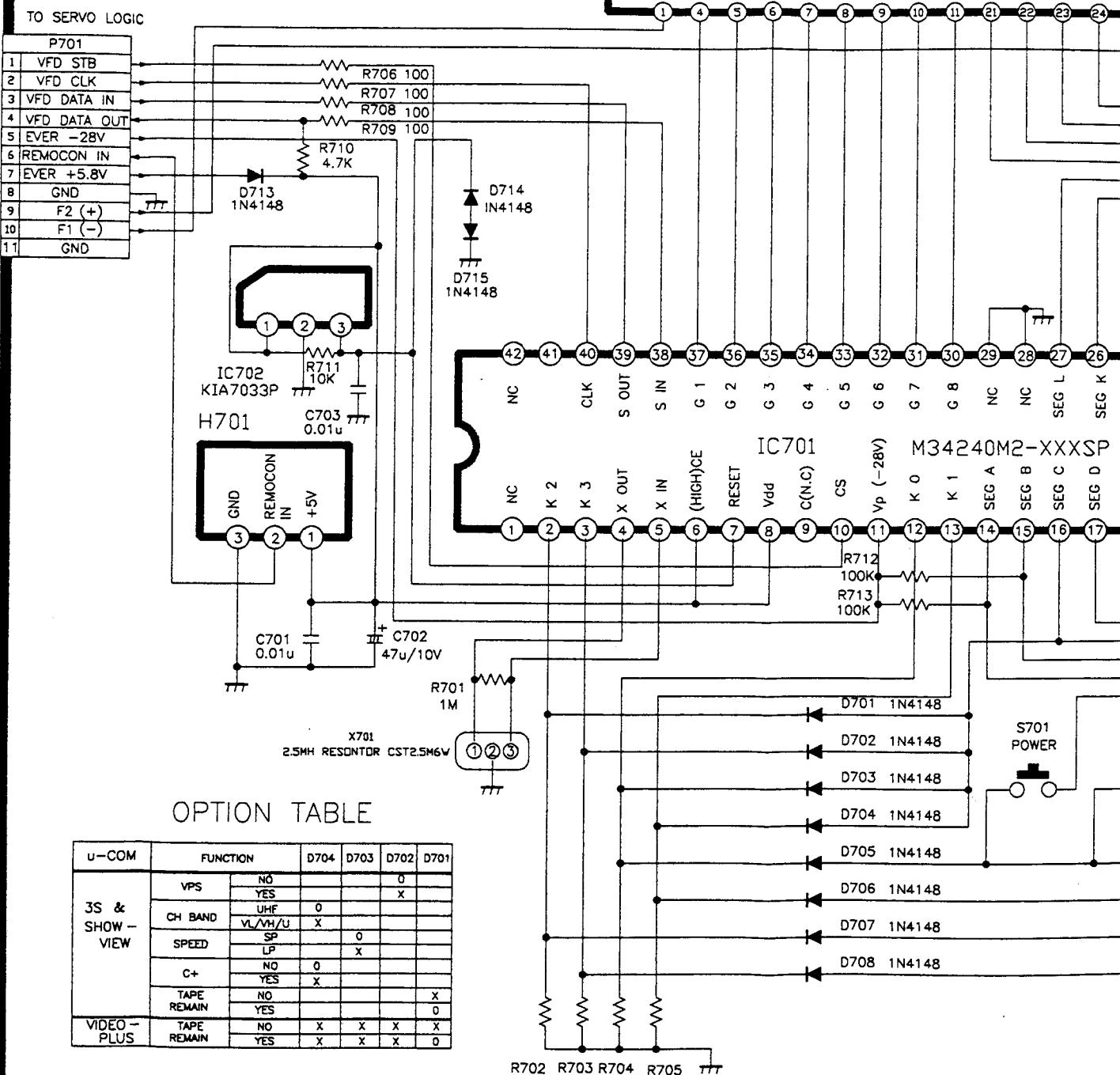




## 4-4. LOGIC CIRCUIT



G701  
8MT-88GK



## OPTION TABLE

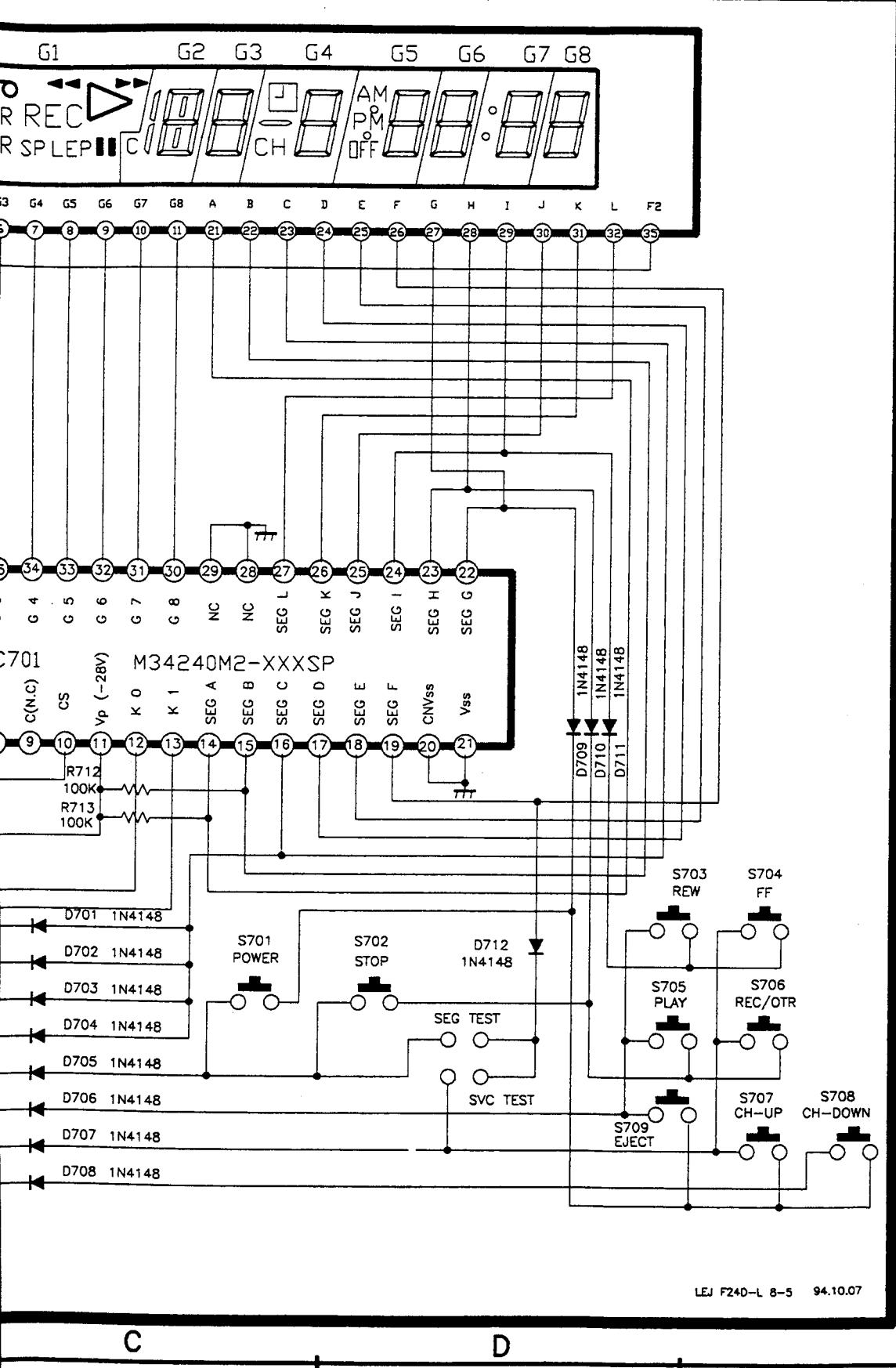
U-COM	FUNCTION		D704	D703	D702	D701
3S & SHOW - VIEW	VPS	NO			0	
		YES			X	
	CH BAND	UHF	0			
		VL/VH/U	X			
	SPEED	SP		0		
		LP		X		
	C+	NO	0			
		YES	X			
VIDEO - PLUS	TAPE REMAIN	NO				X
		YES				0
	TAPE REMAIN	NO	X	X	X	X

6

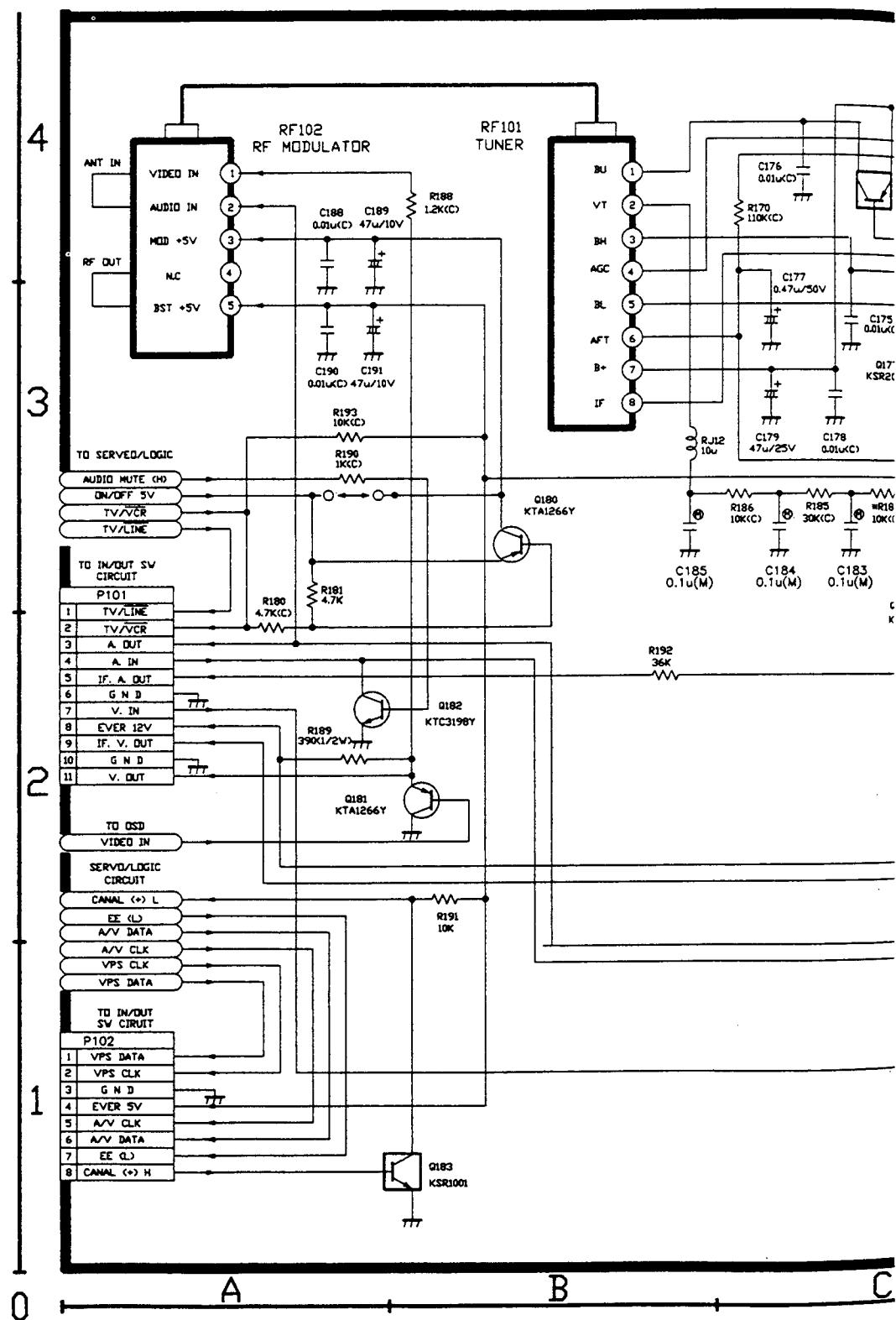
A

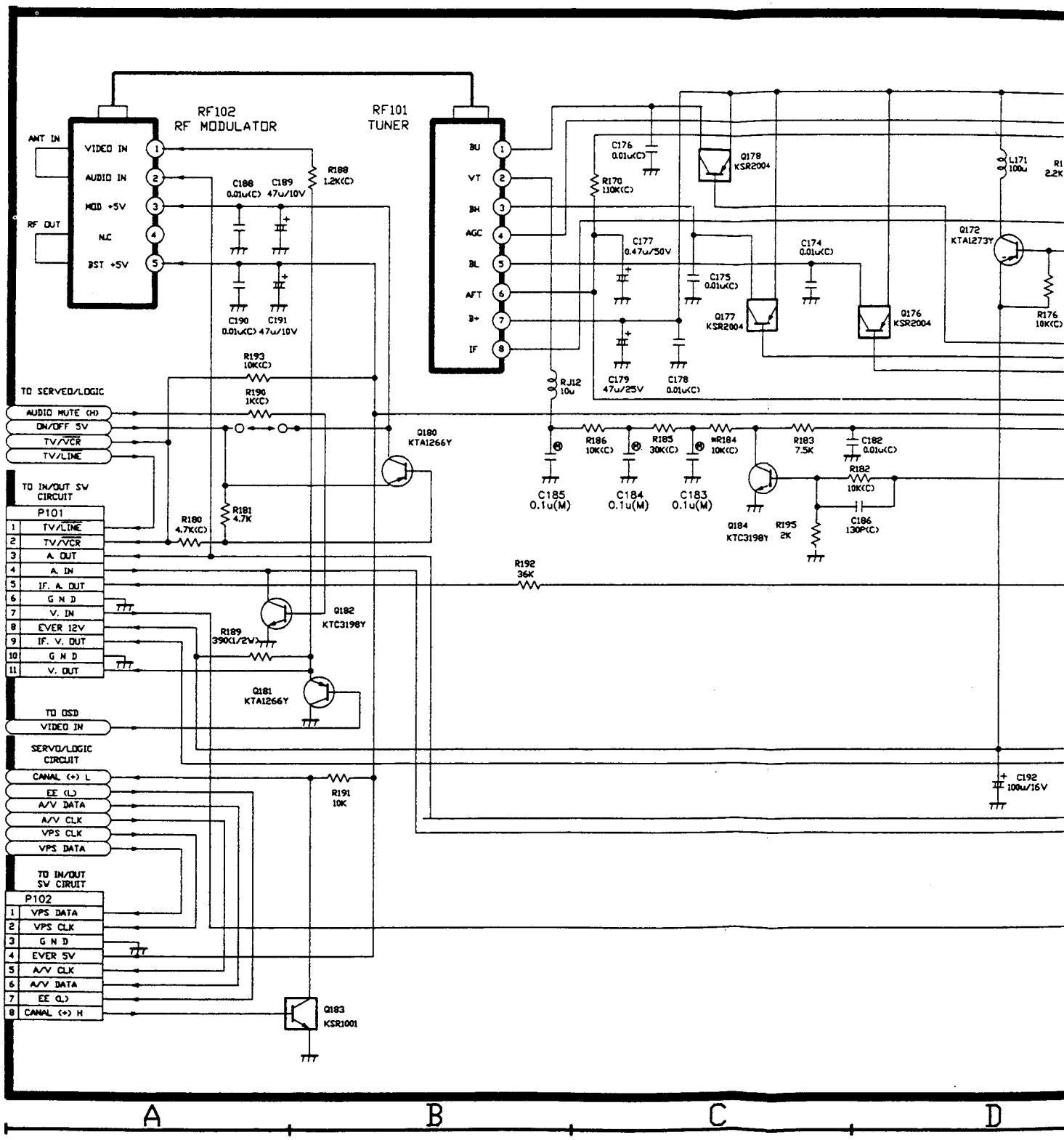
B

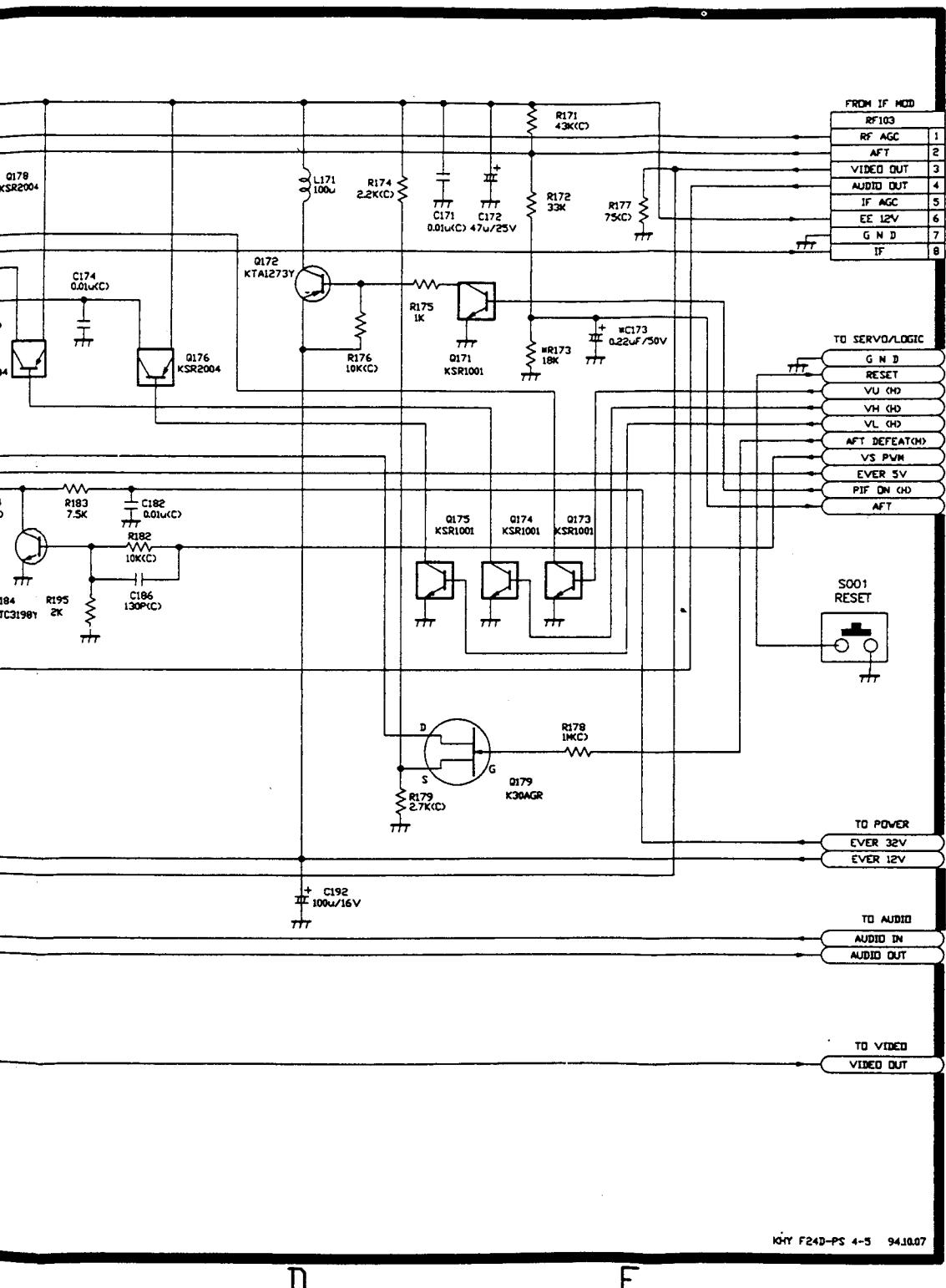
0



## 4-7. PIF CIRCUIT

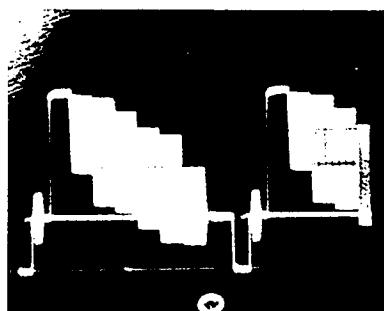




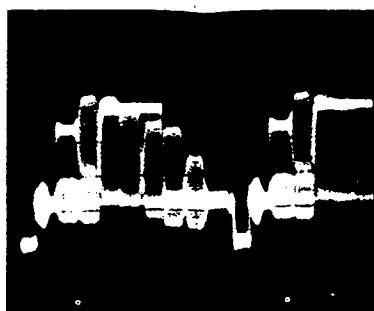


D

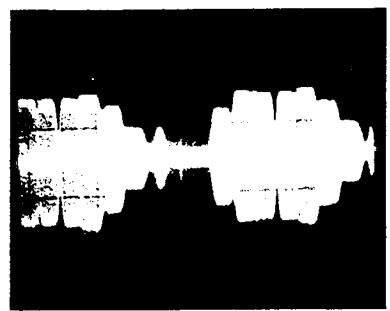
E



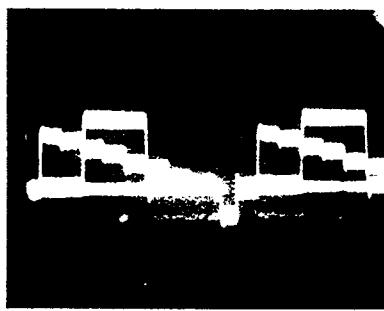
① VIDEO INPUT SIGNAL  
(50mV/10ms)



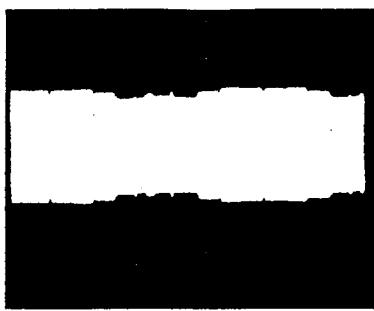
② VIDEO OUTPUT SIGNAL  
(50mV/10ms)



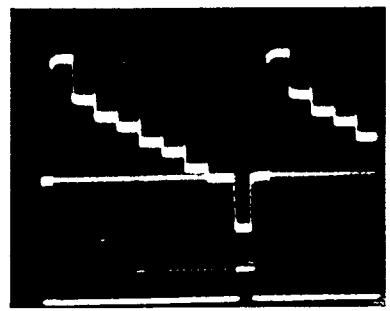
③ COLOR BURST SIGNAL  
(50mV/10ms)



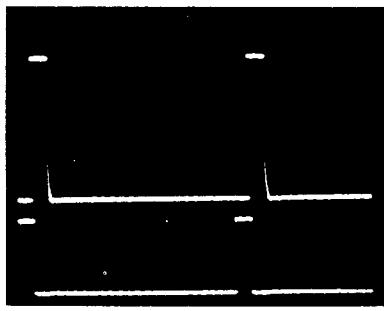
④ AFTER CCD Y  
(100mV/10ms)



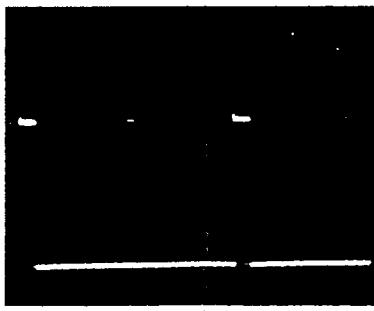
⑤ TJ399 REC Y+C SIGNAL  
(100mV/10ms)



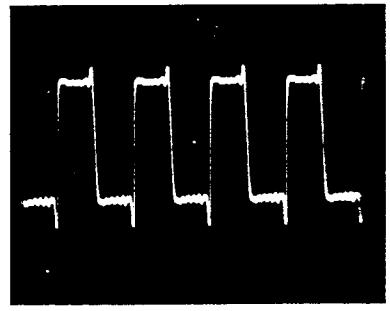
⑥ CLAMP INPUT SIGNAL  
(100mV/10ms)



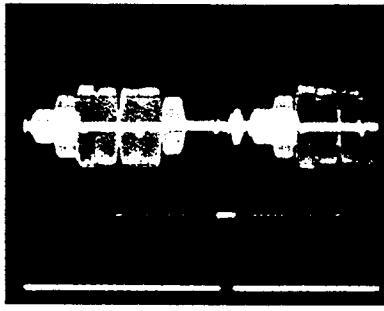
⑦ BGP OUTPUT TERMINAL  
(1V/10ms)



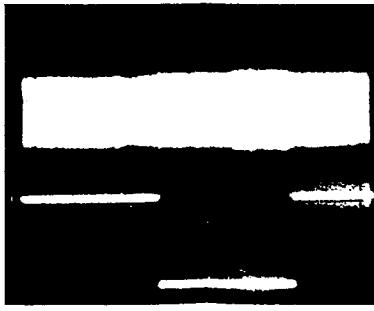
⑧ TJ313 C.SYNC  
(1V/10ms)



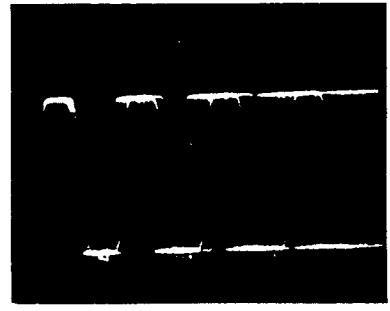
⑨ PB. FSC  
(200mV/0.1μs)



⑩ PLAYBACK COLOR  
(100mV/10μs)



⑪ TEST ENVE  
PLAYBACK (SP MODE)



⑫ TJ391 MODULATION FM  
SIGNAL (20mV/50ms)